THE
SCHOOL JOURNAL
ORGAN OF THE DEPARTMENT OF PUBLIC INSTRUCTION AND OF THE STATE TEACHERS' ASSOCIATION.

Vol. 56. FEBRUARY, 1908. No. 8

HIGH SCHOOL DEPARTMENT OF STATE EDUCATIONAL ASSOCIATION.

PROCEEDINGS OF THIRD ANNUAL MEETING, AT HARRISBURG.

THE first session of the High School Department was held in the Assembly room of the Department of Public Instruction, Harrisburg, Thursday evening, December 26, 1907. The meeting which was an informal one for round table discussion of a number of suggested questions, was called to order by President J. P. Breidinger, at 8 o'clock. He introduced Dr. N. C. Schaeffer who gave a brief address of welcome to Harrisburg and to the Department of Public Instruction. He also announced the appointment of Professor W. S. Hertzog, of California (Pa.) State Normal School, and Professor R. D. Koch, of Philipsburg, as State Inspectors of High Schools. These appointments were made pursuant to the provisions of an item in the general appropriation bill to pay the salary of high school inspectors. The Attorney-General has given an opinion that as the Supreme Court of Pennsylvania has ruled that such an item in the appropriations is sufficient authority, it is within the general powers of the State Superintendent to make such appointment.

The first subject called was "High School Literary Societies." Mr. J. D. Stark, principal of Sharon, opened the discussion. He does not consider literary societies a necessity, and sometimes they are a detriment to the best interests of the school, especially where they are under full control of pupils.

Mr. T. J. George, principal of Carnegie, is a firm believer in literary societies, especially as a means of interesting pupils and patrons. They develop the best in the boy or girl, and have a tendency to help the discipline of the school. Pupils should not be allowed entire control but teachers should see that preparation is made and drill the pupils. In twelve years he had not had a single case of non-preparation. Sometimes as many as eight hundred people attend these society meetings.

Mr. P. M. Ballard, principal, described a novel society among the boys of the Williamsport high school, in which pupils are elected to membership which is limited, Miss Thatcher, the teacher of English, who acts as critic, continued the description. She finds the work helpful to the boys, who take criticism kindly. It brings the students and faculty closer together.

Mr. J. D. Geist, principal of Hazleton, has one meeting of the literary society each month. Sometimes there are difficulties to be overcome, but they are always a means of great good in teaching pupils to make the effort to do creditable work in discussions and otherwise upon the programme. They should always be under supervision of the teachers.

Mr. J. P. Breidinger, principal, Wilkes-Barre, thinks these societies are doing a useful work. Give boys and girls drill in rhetoricals and parliamentary practice. Give the pupils entire control of the work, and avoid any appearance of compulsion.

Miss Anna Ankrom, principal of Coraopolis, said the work of their society under student control has been attended with excellent results, and that the girls better the boys.

Dr. Cheesmen A. Herrick, of Philadelphia Central High School, described the literary societies of that institution. In the two

upper classes a mock House of Representatives is maintained. The professor of political science presides, all formalities of legislation are carried out, and many interesting debates occur. Literary societies under student control are maintained in the Freshman and Sophomore classes, a critic teacher being present at all sessions.

Mr. Landis Tanger, principal, Bedford, divides the school into four sections, participation compulsory, and requires all candidates for office to be familiar with parliamentary ruling and practice.

The problem of teaching and handling large classes was next taken up for discussion. Professor J. A. Stewart, of Altoona, considers large classes economic waste, for about one-fourth of a large class are listless pupils and become drones.

Dr. Herrick said their classes average forty pupils. In large classes it is difficult to control attention. There are always some who are restless and may be obstreperous. The best that can be done is to have each pupil recite about twice a week. Large classes should not be permitted.

Professor J. A. Moyer, of the Northeast Manual Training High School of Philadelphia, said that for two hundred days in the vear, five hours a day, he has classes of forty-eight boys each. If the rest of you have large classes, I must be teaching a mob. I aim to have from twelve to fifteen recite each day, or each pupil three times in two weeks. Ninety-seven of my pupils expect to enter the University of Pennsylvania and under the circumstances I find it a tremendous problem to meet its requirements.

Mr. J. F. Adams, principal, Millersburg, described his method of dividing a large class into groups, treating groups as individuals. In a class of thirty-five he finds it very difficult to give weak pupils proper drill without robbing stronger ones. It is more easy to do in mathematics than in the languages or in science.

Mr. A. B. Wallize, principal, Milton, gave his experience in handling a class of sixty-seven.

"Commencement" was the next subject called: Dr. L. S. Shimmel, of Harrisburg, expressed grave doubts as to the advisability of orations and essays by graduates, calling it the "greatest steal going."

Mr. W. S. Steele, principal, Harrisburg, described the method used in that city, namely, a class-day exercise entirely in hands of pupils, followed by the Commencement proper with five orations by honor members of the class, with an address by some prominent educator.

Mr. J. P. Breidinger, Wilkes-Barre: The faculty selects the best ten, but are not at liberty to say who have best marks.

The subject of Faculty meetings was discussed briefly by Principals G. D. Robb, Altoona; J. D. Geist, Hazleton; O. C. Bower, McKeesport, and G. W. Finch, Uniontown.

The chairman then introduced High School Inspector Hertzog, who spoke briefly in reply to the question, "Is the Public expecting too much of the graduate?" after which the conference adjourned.

FRIDAY MORNING.

AFTER devotional exercises conducted by Rev. S. B. Evans, pastor of Ridge Avenue M. E. Church, Harrisburg, Dr. Cheesman A. Herrick presented the report of the committee on High School Supervision. This committee, appointed two years ago at Williamsport, was composed of Dr. E. D. Warfield, president of Lafayette College; Professor Rynearson, director of high schools, Pittsburg; J. D. Stewart, Altoona; Dr. Cheesman A. Herrick and Dr. N. C. Schaeffer.

Dr. Herrick told how the committee had labored to get the last Legislature to pass a bill allowing the State Superintendent to appoint inspectors for the schools, and how they were finally given an appropriation of $12,000 for the support of these inspectors, but no power to have them appointed. He then told how the Attorney-General had handed down a decision authorizing the superintendent to appoint these men, as it was a detail with which the State Legislature did not trouble itself and came under the direction of the head of that department. "So finally," said Mr. Herrick, "Dr. Schaeffer has appointed the two inspectors, W. S. Hertzog, of California State Normal School, and R. D. Koch, of Philipsburg High School, and the work of this committee is finished."

It was, on motion, agreed that the committee should serve another year to be in position to advise or counsel with the School Code Commission.

Professor John W. Moyer, of Philadelphia, presented the following paper on the "Disciplinary and Economic Value of Bookkeeping."

DISCIPLINARY AND ECONOMIC VALUE OF BOOK-KEEPING.

Teachers of mathematics, students of education, and business men are asking us two questions:

1. As compared with the teaching of other subjects, why are the results from

the teaching of mathematics so disappointing?

2. Is there not a great disproportion between the time spent and the results obtained in mathematical teaching?

As concerns the former of these two questions, I need not repeat to you what mathematical teachers and students of education say about it; you know as well as I do. So far as the business man is concerned, a recent talk with two of them, who employ over 12,000 young men and women who are products of our system of education, gave me their point of view. They want accuracy in simple mathematical operations, neatness of work, resourcefulness, tact; and they do not get them. They must therefore train these young men and women in these characteristics and habits which a good course in any of our higher schools should furnish.

If the first criticism is a just one, so is the second. We spend enough time on mathematics in any of our high schools to get definite results. If these results do not follow a study of the course, the cause is not a lack of time in doing the work necessary to complete that course.

There are three possible explanations for this apparent failure of the course in mathematics to produce definite satisfactory results:

1. Poorly prepared or inefficient teachers.
2. Faulty methods of instruction.
3. Ill adapted and badly arranged subject matter of instruction.

The first of these suppositions may be dismissed with a word. With so many Normal Courses in school and college, so wide a field for observation and practice, so extensive a literature based on the experience of successful students of education, there is no possible excuse for keeping an inefficient teacher.

So far as the second supposition is concerned, the personality and character of the teacher so mould his work in the class room, that the method is a part of the man. It is the outgrowth of his experience and of his daily contact with his pupils. If that be true, poor methods mean inefficient teachers.

I believe that the explanation lies in a poorly planned and badly arranged course of study. Arithmetic, Algebra, Geometry, Book-keeping, Trigonometry, Mechanics, are not culture studies. They are the means by which we solve practical problems and do practical work. They were not invented until there was a real need for them. They help to develop the cultural side of a school or college course, it is true; but they are first of all practical, and because they are practical they are for use and not primarily for culture.

If then, a mathematical course should be a practical course, let me urge that bookkeeping should be a part of every high school curriculum, because it is one of the most practical mathematical studies. I would urge its careful study, not by those who expect to be book-keepers or business men, for that is taken for granted; but by all pupils of all high schools, because:

1. All mathematical work should lead to a definite practical end. We can by no means be sure that mental power secured by abstract methods will serve its end when we need to use it. That training for life is best which is definite, thoroughly planned, carefully worked out. A haphazard training produces discouragement, distrust, disappointment, when just the opposite qualities are needed to meet emergencies. All men and women need, not bookkeeping, but the training which bookkeeping gives.

2. Every individual, who is at all a part of the community in which he lives, needs the training which bookkeeping gives. In his daily dealings with business men in business questions; in his relation to his fellow citizens in all questions which affect his standing and his influence among them as a free citizen of a free state; in the determination of questions in his own household, these principles of right, justice, honesty, integrity, which an exact knowledge of an exact science helps to inculcate, will find constant exercise.

3. Every citizen, whether he be rich or poor, high or low, employer or employé, needs a thorough training in these qualities which go to give him a sure and safe standing among his fellow-men. He must be accurate in work, in conduct, in conversation. He must be neat in person, in address, in methods of work. He must be systematic in planning and in carrying out his plans. He must be honest in everything, and clear, careful, sure, and resourceful every hour in the day.

And I am convinced, by both observation and practical experience, that no other study so tends to develop and train these qualities, as does the study of bookkeeping.

Dr. Thomas F. Hunt, dean of the Agricultural Department of State College and director of the experiment station, made the following address on "Agriculture in Township High Schools."

AGRICULTURE IN SECONDARY SCHOOLS.

It is well to remind ourselves at the very outset that the most important problem in secondary education is not primarily the subject or subjects taught. If out of every ten pupils who enter the public schools only one enters the high school, it must be obvious that the question of first importance it not whether this or that subject should be taught or whether one kind of education is better than another, but the prime question is how to reach the nine boys and girls who now fail to receive the benefits of secondary edcuation.

Two important factors in bringing about this result are inspiration and facilities. Education is dependent upon both ideals and opportunity. Going to a high school and later to a university was with the speaker merely a matter of accident or a chapter of accidents. Such educational resources were beyond the horizon of himself and his schoolmates. On the other hand, the idea of not going to college never seems to have occurred to his son as an educational possibility. To him and his schoolmates, raised in a university atmosphere, a college education is as much a part of their educational ideals as the sun is a part of the solar system. They take it for granted.

Of course with inspiration must go opportunity. It goes without saying that as far as possible every boy and girl is entitled to equal educational opportunities. The greater the opportunities, moreover, the greater will be the inspiration and the demand. It is for this reason that higher education grows like a snowball. The larger it becomes the more snow it must gather.

This much has been said in order that in the discussion which follows on agriculture in the secondary schools the wrong emphasis shall not be put upon the subject. The purpose of schools is not to teach subjects but to teach boys and girls. Subjects are incidental to so training boys and girls that they will be able to live the fullest possible lives. When I look over a group of educated men, say for example a college faculty, and reflect that no two of them were trained alike, that in many cases the kind of education has been as wide apart as the north and south poles, although the amount may have been substantially the same, I am compelled to conclude that it is not essential that men and women should pass through the same educational cider-press in order to succeed in life or to be of the highest service. It also gives me quite a different view concerning entrance requirements. But that is another story and to discuss it here might lead us astray. All that is needed to be said here is that we need to inspire boys and girls with a desire for knowledge and culture and not to put unnecessary difficulties in the way of their obtaining it.

Says President Roosevelt in his speech at the fiftieth anniversary of the founding of the Michigan Agricultural College:

"Book learning is very important but it is by no means everything: and we shall never get the right idea of education until we definitely understand that a man may be well trained in book-learning and yet in the proper sense of the word and for all practical purposes be utterly uneducated; while a man of comparatively little book-learning may, nevertheless, in essentials have a good training." Every student of education knows this is true but I sometimes think some of us do not give it time to soak in. It is not the purpose this evening, therefore, to consider the desirability of teaching agriculture and related subjects in high schools and other secondary institutions but to study the evolution of this movement as a basis for discussing the best method of introducing agriculture into these schools in Pennsylvania. Dr. Schaeffer has said there are 301 township high schools in Pennsylvania and that agriculture must be placed in every one of them. How can this best be accomplished? How may we get down to business?

The Land Grant Act of 1862 which provided for the teaching of agriculture and mechanic arts, established in each state a college. When this act was passed the term "college" had a definite meaning, which clearly differentiated it from an academy. Notwithstanding this fact, however a number of the colleges in this country have been, so far as their entrance requirements are concerned, little or not at all above those of secondary schools. Such colleges have had a greater number of teachers and larger facilities, especially in the way of laboratories, than those possessed by ordinary high schools.

That they have done a somewhat higher grade of work than is possible in an ordinary high school is probable. Neither criticism nor comparison is here intended. The point is that for many years secondary education in agriculture has been an accomplished fact in this country. Almost all the agricultural colleges have recognized the demand for secondary education by permitting students with less than college entrance requirements and sometimes without entrance requirements of any kind to enter and take such studies in agriculture

and allied branches as their previous training would permit. In some instances the students have entered the classes with regular students and in other cases separate classes have been organized. Not infrequently such students subsequently make up their entrance requirements and graduate. Some of the best men the colleges have turned out have been of this class.

Not only have students been permitted thus to pursue studies throughout the year but in most institutions winter courses, usually varying in length from eight to twelve weeks, have been organized. These courses have usually been very much specialized, students often giving their entire time to some branch of agriculture as dairying, poultry, husbandry, etc. The pioneer in this work was the University of Wisconsin when, in 1890, Dean Henry organized the first winter course in dairying. While it is true that pumpkins can be grown in three months and oak trees require thirty years, it is also true that these winter term courses not only give useful knowledge and much inspiration but also have pedagogic value when in the hands of real teachers.

The following testimonials are not without interest in this connection.

"I owe my success to the short course, and I doubt whether I would be on the farm to-day had I not taken that course."

"The short course has increased my earning capacity 25 per cent."

"We consider the time spent in Madison at the short course as two of the best spent winters of our lives."

"Farm work is much more interesting to me since taking the short course in agriculture. Work that was once a drudgery is now a pleasure."

"I feel that the money spent in the short course is the most profitable investment I have ever made."

"We have added from 40 to 45 per cent. to the production of our farm by practicing a thorough system of crop rotation. I have learned how to care for live stock, and we have increased our number 25 per cent., and the quality of our animals 60 per cent. Our dairy herd produces easily 50 per cent. more than it did before I took the short course."

"I am unable to express the value of the general surroundings and environments of the university, and habits formed while there. The longer I am away, the clearer do I see the results. The cost is trifling when I spread it over my life, as the advantages obtained will always remain with me."

It should be noted here that the students in the short winter courses have not generally been persons of high school age, but have been older students often with some high school preparation We must, I think, recognize age as a factor in mental development entirely aside from scholastic training.

Professor Henry says: "The short course is not successful with young men under twenty years of age and those who have had no practical farm experience. But it succeeds splendidly with boys who have completed the district school work and who have been partners, as it were, with their fathers in farming or who have actually run farms themselves. There is all the difference in the world between lads who have never had any care or responsibility in their lives and those who have carried such responsibility."

The next step in the evolution of secondary instruction in agriculture was the organizing of definite separate secondary schools within the agricultural colleges themselves. The first separate school of this type was organized in the University of Minnesota and is known as the Minnesota School of Agriculture. This institution offers a three years course of six months each November to April inclusive, thus enabling the boys and girls in that state of long winters and short summers to be on the farm during the greater part of the growing season.

The school was established in 1888. The total attendance in the regular course in the school since its opening has been 4,283 students, not counting any duplicates. There have been 870 graduates of whom 197 were young women.

Special industrial schools have been established in several states, as in Alabama, Georgia, Maryland, New York and Wisconsin. These schools place principal emphasis upon instruction in agriculture, manual training and home economics, while the ordinary high school subjects as such are made incidental. Perhaps the most important schools of this type are those in Wisconsin. In 1901 the Legislature of Wisconsin enacted a law authorizing counties to establish secondary schools of agriculture and domestic economy and providing that the state shall pay each county maintaining such school a sum equal to two-thirds the amount actually expended for maintaining such school during the year, provided that the total amount so apportioned shall not exceed $4,000 to any one school in any one year.

In 1902, two schools of this class were established, one in Menomonie, Dunn county, and the other in Wausau, Marathon county. Students are admitted directly from the rural schools. The regular course consists of two years of eight months each. The

tuition is free to students of the county. It is reported that there was a good attendance at the opening of each school which has steadily increased each year

This movement for specialized secondary industrial schools, including agriculture, mechanic arts and domestic or household science, has attracted widespread attention. Besides being under consideration in several state legislatures, there was introduced January 22, 1907, in the National House of Representatives by Congressman Davis of Minnesota a Bill (H. R. 2475) to provide an annual appropriation for industrial education in agricultural high schools and in city high schools and for branch agricultural experiment stations.

The bill provides for an appropriation "to each state and territory for the maintenance of instruction in agriculture and home economics in agricultural high schools of secondary grade and instruction in mechanic arts and home economics in city high schools of secondary grade a sum of money equal to ten cents per capita of the population of each state and territory." The bill farther provides that the funds thus appropriated shall be used only for instruction in agriculture, mechanic arts and home economics and that all states and territories and all schools accepting these funds shall provide other funds with which to pay the cost of providing the necessary lands and buildings and of instruction in all general studies required to make well-rounded high school courses of study.

The bill farther provides that each agricultural high school may maintain a branch experiment station for each of which the federal government will appropriate annually $2,500 provided the state legislature appropriates an equal amount.

It will be seen that if the state of Pennsylvania has a population of 6,000,000 that this means a federal appropriation of $600,000 annually for secondary education in agriculture, mechanic arts and home economics, to say nothing of the money appropriated for the branch experiment stations. In addition money must be provided by the state or otherwise for the necessary lands and buildings and for the instruction in all general studies required to make well-rounded high school courses of study.

While this movement has been going on for specialized secondary agricultural or industrial schools, another movement has been in progress looking to the introduction of agriculture into high schools substantially as they exist to-day. The persons who are agitating for secondary education in agriculture may be divided into three classes: (1) Those who favor the specialized industrial or agricultural high schools as above mentioned; (2) those who do not believe in agricultural high schools any more than they believe in algebraic high schools or botanical high schools, but who believe that agriculture is a subject which may be taught in any high school to any student, just as Latin, or geometry or physics may be taught; (3) the third class are those who favor both classes of schools, namely, the specialized agricultural high school with a trained faculty of experts and the ordinary high school with agriculture taking its place with other subjects.

The argument with some is that the specialized high school is a phase of our educational development and is necessary for the purpose of creating interest and enthusiasm and for the purpose of working out satisfactory systems of instruction; that when these special schools have demonstrated their usefulness and place in the educational system, then the ordinary high schools of the country will adopt such form of instruction as has been proved best adapted to their needs.

It is a mistake to believe that the same system of education will work equally well in all places. What may be best for Georgia or Minnesota may not be best for Pennsylvania or Massachusetts. I hold, however, that any system of education is faulty which does not permit boys and girls between the ages of fourteen and eighteen to sleep at home. At that age the boys and girls not only need their parents but what is perhaps no less important the parents need the boys and girls and any system of education which looks toward the breaking up of the home life at these ages cannot be looked upon as ideal. What is needed is a high school within sleeping distance of every boy and girl of high school age in the state. In each of these high schools every boy that wishes to do so should be able to get some knowledge that will fit him directly for performing successfully the most important duty of every man, viz., earning his daily bread, and every girl should receive training in home economics whether she wishes it or not.

It is high time that we abandoned that educational ideal that there is something unclean in preparing a boy or girl to earn a living. One of the greatest college presidents of this country recently said: "The educated man who cannot earn his own living is not worth his education." President Roosevelt in the address to which earlier reference was made said: "No one can look at the peoples of mankind as they stand at present without realizing that industrial training is one of the most potent factors in national development. By the tariff and by our immigration laws we can

protect ourselves against the competition of pauper labor here at home; but when we contend for the markets of the world we can get no protection and we shall then find that our most formidable competitors are the nations in which there is the most highly developed business ability, the most developed industrial skill; and these are the qualities which we must ourselves develop."

Although perhaps less progress is being made in the introduction of agriculture into existing high schools than in the establishment of specialized agricultural high schools, yet some progress is being made. Dean Price of the Ohio State University states that about fifty high schools in Ohio have introduced agricultural instruction.

One difficulty with the introduction of agriculture into the high school has been that high schools prepare students for college instead of for life, and although the smaller part of them go to college, the students themselves have insisted upon subjects which would permit them to enter college. In New York, the State Education Department has met this situation by announcing a syllabus on agriculture upon the completion of which regents' credit is given as for any other subject. This syllabus is designed to occupy three periods a week throughout the year and it is recommended to be given in the sophomore year, following the course in biology in the freshman year. As far as I know, no high school in New York has introduced this syllabus into its curriculum. Among other reasons doubtless on account of lack of teachers to teach the subject. This brings us to the question of how this subject is to be taught if introduced into the high school.

In 1895 the Association of American Agricultural Colleges and Experiment Stations appointed a committee on the methods of teaching agriculture. This committee has made annual reports to the association covering various phases of agricultural education. The seventh report is on secondary courses in agriculture in which the committee shows that agricultural courses may be offered in the high schools without any violent or radical reorganization of existing programmes for such schools. A number of existing high school programmes in different parts of the country were studied and a tentative agricultural course for a number of these was suggested. The following selected from the number, is a simple form of high school course prepared under the direction of the State Superintendent of Public Instruction in Indiana and recommended for use in that state in high schools where at least two teachers are employed in high school work exclusively. Running parallel to this course the committee has prepared a tentative agricultural course, which presupposes an additional teacher.

First Year.

General course—Algebra 5, English 5, Latin 5, physics or chemistry 5.

Tentative agricultural course—English 5, algebra 5, plants and their cultivation (*i. e.*, botany, general and economic) 5, physics 5.

Second Year.

General course—Algebra (one-third year) 5, geometry (two-thirds year) 5, English 5, Latin 5.

Tentative agricultural course—English 5, algebra (one-third year) 5, geometry (one-third year) 5, animals and their management (*i. e.*, zoölogy, general and economic) 5, chemistry 5.

Third Year.

General course—Geometry (two-thirds year) 5, elective[a] (one-third year) 5, English 5, history 5.

([a] Mathematics, physical geography, oratory, or advanced physiology.)

Tentative agricultural course—English 5, geometry, Latin, or German 5, agronomy (with special attention to local crops) 5, history 5.

Fourth Year.

General course—Elective[a] 5, zoölogy or botany 5, Latin 5, history 5.

Tentative agricultural course—History 5, political economy 5, zoötechny and dairying 5, Latin or German 5.

With each subject, the number of recitation periods per week is given.

The question is not whether either of these courses is perfect or even logical, but whether it is possible to introduce into existing programmes of recognized standing, agricultural instruction without a radical departure from existing conditions.

It was suggested by the committee that, with the introduction of agriculture into high schools of this kind, the division of studies among three teachers might be as follows: A., English, Latin and German; B., chemistry, botany, zoölogy and agriculture; C., physics, mathematics, history and political economy.

The committee further states that Teacher B. should be an agricultural college graduate and would ordinarily be a man who might be principal of the school, while teachers A. and C. would ordinarily be women. Concerning the value of the instruction the committee has this to say:

"Whenever the manual arts or the natural sciences are largely introduced into high school courses the practical effect is to reduce the amount of time given to the

ancient and modern languages. With improved instruction in English and science the effect of this on the general training of the student is not as marked as it might otherwise be, and whatever the theoretical pedagogical value of instruction in ancient or modern languages, there is little doubt that when a choice has to be made between these subjects and those which relate directly to the pursuit by which the pupil is to gain his livelihood, it will in most cases be desirable that he shall choose the things of most direct benefit in his life work. That it will not always be necessary for the student of agriculture to entirely neglect the study of at least one ancient or modern language in this high school course, provided his tastes or attainments lead him in that direction, may be seen from examination of the programmes of courses presented herewith.

"It is believed that the presentation of schedules as above justifies the assertion that it is entirely practicable to adjust an agricultural course of high school grade to existing high school schedules and to make this agricultural course fairly satisfactory for the purposes of general training, as well as elementary instruction in the theory and practice of agriculture. The graduate of such an agricultural course may fairly be expected to understand the scientific basis of improved agriculture and to have an intelligent appreciation of the needs of a progressive agriculture. He will then be in position to profit by the results of the investigations of the experiment stations and by the information regarding the progress of his art which may come to him from the more intelligent of his neighbors, farmers' institutes, and good books and journals. He will be likely to become an inteligent and progressive farmer as well as a refined and useful citizen and homemaker."

The Committee on Methods of Teaching Agriculture were, however, painfully aware that, if progress in the introduction of agriculture in high schools was to be made, the subject-matter must be put into pedagogic form adapted to the needs of the high school pupils. This has been done in some measure by the preparation of two syllabi. One is entitled exercises in elementary agriculture with a substitute plant production, written by Dick J. Crosby, and the other is entitled a syllabus on Agronomy for Secondary Schools, written by Professor G. F. Warren. These are intended as laboratory guides or manuals for the use of the teacher and not as text-books to be studied by the pupil.

The pamphlet on elementary agriculture consists of 54 exercises on such subjects as: How roots absorb moisture; to show that plants get food from soil; to show the rise of water in plants; how plants grow; seeds, germination test; purity test; to show how young plants get food from seeds; to make soft cuttings; hard cuttings; cleft grafting, whip grafting, budding; conditions essential to plant growth, light, heat, moisture, air; classification of soils; air in soils; the effect of lime on soils; temperature of soils as affected by color; the influence of tillage and mulches on the retention of moisture in soils; influence of drainage upon plant growth; selection of seed corn; field study of loss from poor seed corn; the feeding value of corn.

This report was prepared primarily for schools below the high school grades, but, in many parts of the country, especially in the South, this set of exercises might well find a place in high schools of the more elementary type.

Your attention is next called to the syllabus on Agronomy for Secondary Schools. If the tentative agricultural course which has been presented be examined it will be noted that this course provides for instruction in botany and physics in the first year; zoölogy and chemistry in the second year; agronomy in the third year and zoötechny and dairying in the fourth year. Since these terms, agronomy and zoötechny, are comparatively new, it may be well to pause here long enough to give a few definitions. Agriculture may be defined as the science and art of producing living things. There are two classes of living things, namely, plants and animals. The science and art of producing plants is, therefore, agronomy, while the science and art of producing animals is zoötechny or animal husbandry. Botany studies the fundamental law of plant growth; agronomy studies the economical application of these laws. Zoölogy in like manner classifies animals: zoötechny studies the production of those useful to mankind. It is obvious that much of the usefulness of botany and zoölogy will depend upon the point of view from which it is taught.

Referring again to this tentative course in agriculture it will be seen that this syllabus on agronomy is intended to cover the crop producing side of agriculture and may occupy a year of study throughout the year, preferably, perhaps, the junior year in order that the student should have first studied botany, chemistry and physics. Of course I am aware that here is opportunity for endless discussion, but order of subjects is not an essential part of this discussion, and in any case I am convinced that the order of subjects is not a cast-iron matter and that much depends upon the point of view with which the subject is presented.

The syllabus on agronomy is more than

a syllabus; it is a set of daily instructions to the teacher. It tells the teacher whether on a given day the exercise is to be a recitation, a demonstration lecture, a laboratory exercise or a field excursion. It gives a brief outline of the subject-matter and refers the teacher to bulletins or books containing the subject-matter in question. If a demonstration lecture or a laboratory exercise it states precisely the materials and apparatus required.

This syllabus recognizes four kinds of exercises, namely, recitations. demonstration lectures, laboratory exercises, and field excursions.

The following is a sample of the field excursions:

10 (3) *Field Lesson.* Relation of crops to types of soil, plant roots, nodules on legumes.

Materials. Rule, spade.

(*a*) Go across several farms. Notice what kinds of crops are being grown on sandy soils, on clay soils, on wet land. Some crops can be raised on a great variety of soils. Thus, timothy hay can be grown successfully on clays, clay loams, and loams, or even on fine sand, but it usually does best on the clay or clay loams. Peaches usually thrive best on fine, sandy soils. White or Irish potatoes require a loose, moist soil for their best development. To what extent are the crops varied with the kinds of soil in your region?

(*b*) Dig down beside a cornstalk; notice how deep it is to the first roots; to the deepest roots. Repeat in several places and on different kinds of soil, if possible. How deep could a cultivator go without hurting the roots? Similarly, find the depth and lateral extent of roots of clover and other crops. As the roots decay they add to the humus and make the soil more productive. What plant roots examined would tend to deepen the soil and be most valuable as they decay?

(*c*) Carefully dig up a clover plant; look for nodules on the roots. Bacteria live in these nodules. By means of these nitrogen is taken from the air in the soil and is made available for plant use. Nitrogen is one of the most important foods for plants. It is the most expensive part of common fertilizers. Only members of the pea family (legumes) are capable of thus getting nitrogen. Why does clover benefit a crop that follows it? Consider the depth and amount of roots as well as the nodules. Dig any of the following or other legumes that you see and look for nodules: White clover, sweet clover, beans, peas, vetches, alfalfa, etc. Later lessons will consider this topic again. (Farmers' Bul., 215, p. 15; Experiments with Plants, pp. 133–135 and 149; Physics of Agriculture, pp. 150–157.)

Then follow two recitations covering this subject.

Next a laboratory exercise is selected for illustration which reads as follows:

60 (*a*) *Laboratory.* Study of the spike of wheat.

Materials. Heads of two or more varieties of wheat. The following are suggested: Dawson's Golden Chaff, a soft white winter; Fultz, a red winter; Turky, a hard winter; Fife, or blue stem, a hard spring; Durum, a macaroni. The spikes of wheat should be laid between pieces of moistened blotting paper for several hours before handing to students, in order to toughen the parts.

Request each student to report the following, after examining a head of wheat:

1. Number of spikelets in the spike of wheat.
2. Number of flowers in each spikelet.
3. Number of grains in the whole spike.
4. Determine the number and arrange weight of grains occupying first, second, third, and fourth place from rachis.
5. Number of empty glumes in a spikelet.
6. Make a sketch of the beak, shoulder, and auricle of the empty glume.
7. How does the flowering glume differ from the palea?
8. How is the spikelet attached to the rachis?
9. Draw the rachis.

(Cereals in America, pp. 31–33.)

The laboratory exercise is followed by a recitation in which it is sought to develop the purpose of this exercise. Lastly an illustration of a demonstration lecture is given.

51 (2) *Demonstration.* Germination test of corn.

Materials. Ten or more ears of corn.

Perform the test by the method given in Farmers' Bulletin 243, page 8. In this manner test seed for farmers in the community. This is followed by a recitation on the germination of seed corn in preparation for which students are required to study Farmers' Bulletins 229 and 253. It will be noted that in each of these cases the recitation does not precede but follows the exercises in which the student is taught to observe and reason for himself.

I once had a class in what is known as Animal Mechanics. Instead of assigning a lesson in a text-book, without any previous preparation I took the class into a room where there were some horses and two pairs of scales placed side by side in such manner that the front and hind members of the horse could be weighed separately but simultaneously. The students were requested to determine these weights

and calculate the position of the line of gravitation. Then they placed the front feet of a horse on a box so as to represent the horse going up hill, or the hind feet on a box to represent him going down hill and determine whether the line of gravitation had changed. After one of these students had been working for an hour or so, he came to me and said: "I must have made a mistake, I do not find that the line of gravitation has been changed." "Well," I said, "if you found it to be so, it must be so." With that easy confidential air that a student will often assume toward his instructor in field excursions or laboratory exercises the student said: "Professor, are you trying to string us?" "No," I laughingly replied, "I am not trying to string you. I am trying to get you to determine the facts. To-morrow I will explain to you the reasons for the facts." A half-hour later the same student came to me with a correct explanation of the facts which he had thought out for himself. I could have given the facts and explained the reasons for them to the whole class in fifteen minutes. But the information would have been my information. In two hours, the student had determined for himself the facts and thought the reasons. The information was no longer mine, it was his.

But you may say, as others have said, that no teacher short of an agricultural college graduate is prepared to teach this syllabus and that there are not enough agricultural college graduates to man the high schools of the country even if they had the inclination and were otherwise qualified for teaching high school students.

It is not quite true that no teacher could teach this syllabus. A teacher with a good fundamental training in chemistry and botany could take this syllabus and successfully present the subject to high school students. But if we are looking at it from the standpoint of state system of public instruction for all practical purposes it is true. It is probably true that the agricultural college in this state will not in the next ten years graduate enough men and women to supply the needs for agricultural instruction should it be placed in only the township high schools of this state. This is on the assumption that such college graduates would be qualified to teach and if qualified would be willing to accept the positions offered. One phase of this question may be illustrated by calling attention to some statistics concerning agricultural college graduates.

The institution with which I have been connected for four years has in that four years given 122 degrees to students in agriculture. There have been given 85 first or baccalaureate degrees, 32 second or master's degrees and 5 doctor's degrees. It will be recalled that these statistics include the class which graduated on June 20 and that the oldest graduate is of but three years standing. The average compensation received by 30 of those having first degrees and whose salaries are known has been during the past year or will be during the coming year in case of recent graduates, $1,039 and for 25 having advanced degrees $1,612, or the average compensation for 55 whose salaries are known is $1,300. This is in most instances their initial salary. A short time ago I compiled the initial salary of 21 persons who had been students of mine and the average was $1,030.

Is there no way of getting agriculture taught in high schools? There is, I think, a perfectly feasible and simple way to reach this question. As is well known to the members of this audience it is a common practice in summer schools for students to receive the same instruction and get the same credit in German, Latin, French and other subjects in six weeks as they receive by pursuing the subject through the academic year in a university. In a university the student may pursue six three-hour subjects for 36 weeks, or he or she may pursue one of these subjects during six weeks in the summer school. Now if it is possible to prepare a teacher to teach German or French or Latin or physics in the high school by six weeks of continuous instruction in a summer school, it is possible to prepare a teacher to teach this syllabus on agronomy at a summer school especially organized for this purpose. A teacher cannot be taught all there is to be known about agriculture in six weeks any more than he can be taught all of physics or German but he can be prepared to teach this syllabus. Arrangements have been consummated by which Professors from the Pennsylvania State College will give such instruction at the Summer Schools at Mt. Gretna and Ebensburg next July.

This plan is fundamentally different from the one that proposes to make agricultural college graduates principals of high schools. It is not the purpose to train agriculturists to become teachers but to train teachers to teach different branches of agriculture. There are a number of things to be said in favor of this plan. In the first place, it will work. It is perfectly feasible to assemble any number of already well trained teachers and give them the necessary subject-matter or put them in the way of getting it in six weeks. To show them the method of teaching this syllabus by actually performing every demonstration lecture, every laboratory exercise and taking many field excursions which these teachers would repeat during the year in the high school. A set of laboratory apparatus and the ma-

terials necessary for the successful presentation of this subject could be prepared at this summer school and each teacher supplied with an outfit. This is an entirely different matter from teaching boys and girls who have studied agriculture or Latin or physics to teach one or more of these subjects successfully.

In the second place, this plan does not contemplate any change in our present agencies for education which in any state system of education must be considered. All the various universities, colleges and high schools will continue to educate the youth of the state. Normal schools and summer schools of the usual sort will continue to train teachers to teach. The sectarian colleges will lose none of their influence by this new education, since they will continue to educate the young men and young women as far as their facilities will allow.

In the third place, this plan of instruction is so simple that no new agencies are needed and so far as I know no new laws need be enacted. The Pennsylvania State College stands ready to offer this instruction to the educational forces of the state provided there is a demand for it. The School of Agriculture of the Pennsylvania State College is anxious to reach every family in the country or in the city with some of that large body of knowledge concerning living things and concerning the every day affairs of life. Your speaker believes that the next step for Pennsylvania in behalf of the movement for greater industrial training is the introduction of agriculture into the township high schools. When this has been well begun we may then proceed to that larger and more difficult task of placing nature study and agriculture into the rural schools.

While it has been well said that the history of agricultural education in this country shows that the line of least resistance and greatest progress has been downward from the agricultural college rather than upward from the rural schools, yet we will probably never get entirely satisfactory results in teaching agriculture in secondary or rural schools, until the school men themselves take hold of the question and arrange the subject-matter and the methods of teaching to suit the needs of the pupils and the facilities of the schools. There lies before the very doors of the teachers of Pennsylvania a great opportunity to organize and direct this industrial training in our public schools along safe and sane lines. The question is no longer will it be done, but how may it be best done? How can it be made the most effective at the least expense of time and money. That it will be done in some form or other is as sure as the sun rises and sets. The fundamental question is how can more and more of our boys and girls be reached with that torch of higher learning so necessary for highest type of useful lives and good citizenship. Will you teachers of Pennsylvania so direct the educational effort of this commonwealth that this greatest of educational problems may be successfully solved?

Professor William F. Gray, of the Art Department of the Philadelphia Central High School, presented the subject of "Art in the High School" much as follows:

ART IN THE HIGH SCHOOL.

Art courses are helpful in many ways. They develop the powers of observation, perception and expression, all of which must be exercised in drawing. They develop the sense of order, orderly arrangement in planning work. They develop the creative and imaginative spirit which is exercised in the expression of ideas, and the appreciation of the beauties of nature through the picturing of plants and other natural forms. It is not art for art's sake, but art for the sake of education. A proper amount of time should be given to art in the complete study of history, literature, science and politics.

Every student leaving the high school at the age of 18 or 19, should have a working knowledge of the principles of representative and constructive drawing and know enough of those of design to distinguish that which is fit and good from that which is unfit for its purpose, as well as have developed a reasonable sense of order. He (or she) should be able to distinguish the important architectural styles and the great schools of Painting and have laid a foundation for later work or reading with the feeling that Fine Art and the minor arts are not a subject apart, and, only for the few or the elect, but for every-day enjoyment and understanding.

This is only what is fair and just to the student, and what is needed to preserve the balance of the intellectual equipment and activities when measured up with the amount of mathematics, literature, history, science and languages which go to make up the high school curriculum, and each of which has had it proper function in developing and training one side or the other of the adolescent brain.

Mediæval notions still prevail in the management of many of our educational institutions to such a degree, however, and there is such a rattling of the dry bones of dead languages and abstract mathematics that the renaissance of educational method is retarded and the humanist idea of bringing the pupil into the most direct possible

contact with the great works of nature and of man makes its way but slowly. "Unless we are to be mere hewers of wood and drawers of water, we should see to it that this æsthetic inheritance is placed side by side with the scientific and literary in the education of the human child."

It is the duty of every one intrusted with the great responsibility of teaching to lend his fullest aid to the reëstablishment of such conditions as prevailed in the prime of Athens or of Florence when the arts were in their extent and perfection, the measure of the civilization and culture of the community and the state.

A fair proportion of the school time should be accorded the art work, particularly in the earlier years, when lecture methods are less effective and advisable and class work with individual help serves best. This should not be less than two hours per week or the extremely moderate fraction of about one-twelfth of the usual 25-hour school week. This proportion would of course have to be at least doubled in a technical or manual training high school, in the economy of which drawing plays so essential a part.

The first two years at least should be devoted to that work in elementary art which constitutes the grammar and rhetoric of the subject; taught on purely educational lines—not for the cleverer few who are interested or show exceptional capacity, and who may some day become artists or draughtsmen, but for the whole group and particularly for the weaker ones, who by their very incapacity reveal the necessity for strengthening that side of their mental and physical organization.

The principles in every phase of the work and in every problem should be the foremost consideration and the work should be judged and rated, first for the knowledge and grasp shown, and second for the manner of presentation. The inauguration of any new phase of work or new problem should be preceded by a clear statement of its educational purpose and its relation to other problems and if possible to other subjects.

Practical work follows or should follow the natural divisions of drawing.

1. *Representation,* which has for its special purpose the development of an ability to not merely look at but to *see* things: to cultivate a sense of form and direction, and of values, as well as a moderate capacity to render simple forms. The geometric solids serve best for the beginnings of this work, with the forms of which they are typical. Symmetrical casts naturally follow, then free ornamental forms.

2. *Construction,* the main purpose of which is to develop the constructive sense and a capacity for planning—for scanning a problem, to ascertain its most important elements or factors—to find where it begins and where it ends. Drawings should be made of real things, such as a bench, book, shelves, clock, etc. This work does not necessarily involve the use of expensive instruments, a cheap pencil compass, a wood or paper ruler or scale and a single triangle being sufficient for all practical purposes.

3. *Design.* To develop ideas of orderly arrangement, of symmetry, grace and proportion, as well as a sense of fitness of form to purpose. Constructive design should deal with things in the round, as sticks, vase forms, book-racks, surface patterns, borders and panel decoration, each of which has its function and consequent special treatment.

4. *Lettering.* The alphabet, and its constructive quality, Roman letters, Arabic numerals, and the derivation of each.

In the later years with the above training as a basis, time could consistently be allowed to drawing for its own sake. Arranged or adjusted to the ability of the pupil with the color element entering as largely as possible, and a few periods, devoted to lessons on the Theory of Color.

The outline of the history of art is best taught by illustrated lectures, and is naturally best adapted to a place in the later work, probably best in the last year. Photographs and prints serve very well and may be got at practically no expense from magazines and periodicals. The Perry, Cosmos, University and other prints afford a practically complete and ample set of illustrations and, in fact, are issued to meet the demands of this very work.

The best method, of course, is that involving the use of the stereopticon or projectoscope, and here expense often stands in the way. The cost of a lantern is not prohibitive, a solar lantern is in some ways the best of all, being only moderately expensive, and the electric arc type in all the most satisfactory, being procurable for not over $75, but the item of slides is a considerable one and presents a difficulty the best solution of which, to my mind, is the adoption in Pennsylvania of the New York State plan of traveling libraries of slides.

This work which counts so much for the culture side ought by no means to be allowed to go by default, however meager the equipment procurable. No extensive knowledge can be gained in the limited time, which, under the most favorable and enlightened conditions, is allotted and every effort of the teacher should be made to use every minute of it in the inculcation of

basic ideas and the development of a feeling for and appreciation of the work and its spirit.

It is a live subject. There is more opportunity to make it and keep it so than any other affords, with the possible exception of biology. The teacher and pupil can be kept in touch with nature and with a wealth of real and living things. The temptation is to become absorbed in these things for their own sakes and I must close with an earnest plea to the teacher not to be led away by this or by the natural personal inclination to work for attractive results, for I think the art teacher is compelled to make more sacrifices of personal choice and ambition than any other.

Also, by a plea to every teacher, not to lose sight of this "third heritage" but to so direct his or her energies and thought to the end that every young man or young woman who goes out from under their care shall have it in as full measure as any other, so that he or she may be as near the perfect and the ideal in mental and physical balances as it is given any of us frail mortals or as near as it is well for us to be.

COMMITTEES APPOINTED.

President Breidinger announced the appointment of the following committees:

On Nominations—G. D. Robb, Altoona; P. M. Bullard, Williamsport; Landis Tanger, Bedford; H. D. Hopkins, Titusville; and J. W. Moyer, Philadelphia. Resolutions—J. D. Stark, Sharon; J. M. Hostetter, Renovo; B. F. Heiges, Manheim; G. W. Finch, Uniontown; J. D. Geist, Hazleton. Auditing Committee—J. J. Kehler, Pottsville; W. S. Steele, Harrisburg; and Jane Mathews, Altoona.

Adjournment.

FRIDAY AFTERNOON.

THE session was given to the work of the Science and Mathematics Section of the High School Department. The meeting was called to order at 2 P. M. by Professor Breidinger, and then turned over to Principal J. D. Stark, of Sharon, chairman of the Executive Committee of the Section.

The minutes of the last meeting, held at Williamsport, December 26, 1906, by Miss Jane Mathews, was followed by the report of the chairman, Mr. Stark, as follows:

REPORT OF "SCIENCE AND MATHEMATICS SECTION."

Previous to the regular meeting of the High School Department held at Williamsport in December, 1906, a call was issued to about 1,100 school people of the state, for a meeting to be held in connection with the department meeting for the inauguration of a Science and Mathematics Association. This resulted in a meeting which formed such an association, with twenty-five charter members, gave it a constitution, made it a "Section" of the High School Department, and placed its direction in the hands of an executive committee of five representing the colleges, normals and high schools.

As chairman of said executive committee I beg leave to offer the following report, setting forth in brief what has been done during this the first year of the section's life.

Since the prime object of the section was "to improve the teaching of science and mathematics in the state," your committee thought it wise first to encourage among the teachers of these branches a lively interest in the organization itself. But the holiday meeting is held at so great a distance from the majority of our teachers, it would be impossible for some time, to engage the attention and secure the attendance of a large number. Again your committee felt that the benefits accruing from such a movement should be extended as far as possible to every teacher in this line of work in the state and not conserved for the few who, coming from the largest high schools, the normals and colleges, might assemble once a year.

So the idea of forming "local centers," to obviate some of the difficulties and to further carry out the foregoing objects, early obtained favor. Your committee, for the past eleven months, has been meeting with very hearty response from the scientists and mathematicians throughout the state in working up local interest in the "centers." At present practically two-thirds of the counties are organized and holding in most cases two meetings per year—a "center" covering from four to seven counties.

The "local centers" have been started in each instance by a committee of interested teachers who have canvassed their proposed district, called for the meeting and sent out programmes. The papers and discussions have all been devoted to science and mathematics, and the "center" organized and left in the hands of an executive committee after the manner of the section.

"Local Center," No. 1—was formed at Clearfield, March 16, with Mr. A. M. Longenecker (physics), of Altoona High School, chairman, to cover Blair, Centre, Huntingdon and Clearfield counties.

No. 2—Greensburg, April 1, with Principal F. E. Baker (sciences), chairman, for Fayette and Westmoreland.

No. 3—Johnstown, April 20, with W. L

Peake (mathematics), chairman, for Bedford, Cambria, Indiana and Somerset.

No. 4—Sunbury, April 20, Principal H. N. Conser, Sunbury high school, chairman, for Columbia, Montour, Northumberland, Union and Snyder.

No. 5—Williamsport, May 4, Mr. L. J. Ulmer (sciences), Williamsport high school, chairman, for Lycoming, Clinton, Bradford, Tioga and Sullivan.

No. 6—Pittsburg, May 26, Professor P. M. Dysart (physics), Pittsburg central high school, chairman, for Allegheny, Washington and Armstrong.

No. 7—Corry, October 26, Mr. C. S. Webb (sciences), Franklin high school, chairman, for Erie, Warren, Crawford and Venango.

No. 8—In process of organization to cover Carbon, Luzerne, Lackawanna, Wyoming Susquehanna, Wayne, Pike and Monroe, with Mr. J. L. Wetter (sciences), Wilkes-Barre high school, chairman, meeting to be held February 29, 1908, at Scranton.

No. 9—Delaware, Chester and Montgomery are in the hands of Principal J. G. E. Smedley and Miss L. E. Reaney, of Chester high school, soon to be organized.

No. 10—Beaver, Butler, Mercer and Lawrence will form a "center" at Sharon or New Castle in February.

The committee has been supplied with full reports of the Local Center meetings and copies of their printed programmes.

The Altoona and Sunbury Centers have held two meetings each, and the Corry and Johnstown Centers have arranged for a second meeting. Each "center" holds at least one meeting a year. We believe, that the strength of the movement and the attendance at the Holiday meeting depends to a great extent upon the interest aroused in the Centers.

The college and normal school professors have given valuable assistance in some of the "centers" and we look for more such coöperation and hope the high schools and colleges may be drawn into closer touch and come to a clearer understanding of their real needs along the lines of science and mathematics.

The section was duly recognized at the State Educational Association held in Greensburg in July and was ably represented in the papers by Mr. A. M. Longenecker of the Altoona high school on "What Experiments should Constitute the Individual Work of a Student in a Year's Course in Physics," and by Mr. Masters of Connelsville high school, on "The Scope and Aim of a Course in Mathematics in the High School."

The committee recommends that the section adopt "School Science and Mathematics," published by Smith and Turton, Chicago, as its "official organ." This journal is the official organ for the leading Secondary Science and Mathematical Associations of the United States.

Seeking the coöperation of the department to assist in furthering our efforts as a Section and thanking all who have thus far so enthusiastically aided us, we respectfully submit this report.

Mr. Stark recommended as a proper official organ for the section, "School Science and Mathematics," a journal published at Chicago, but no action was taken in the matter.

A paper was then read by Principal J. L. Welter, of Wilkes-Barre, on

CHEMISTRY IN THE HIGH SCHOOL.

Before attempting to outline a course of study in High School Chemistry, it would seem advisable to inquire into the purpose of teaching chemistry in the high school. Such inquiry would lead directly to the question—what is the purpose of the high school in our system of education? I believe that the one word *culture* would be the proper answer to such a question—culture that can be measured in terms of usefulness. With by far the greater number of our pupils the instruction given them in the high school is their final preparation for the real work of life. This is the school of last resort in the education of the masses. If the public has a right to expect anything of the high school it is that it shall prepare our boys and girls to become not only self-helpful but important factors in the general movement for bettering the conditions of life to all. The culture of a community is reflected in its daily life. If chemistry has any claim to a place in the high school curriculum that claim must rest largely on its application to the everyday affairs of life. As the years go by our centers of population are becoming more and more congested. This is bringing to the front many problems pertaining to sanitation and the affairs of the home that formerly did not obtain, and the solution of which rests largely with the science of chemistry. Our food and drink, the air we breathe, must be kept pure and wholesome. Disease must be checked if not entirely eradicated. Measures will be proposed, and perhaps passed, that to some may seem harsh and which, therefore, will meet with opposition. I might site a present-day case in point, namely, our compulsory vaccination law. It is vital to the proper solution of these problems that we have a citizenship not only of a high average as to general intelligence, but one that is intelligent

regarding the subject-matter that may have aroused discussion.

Again, in the matter of domestic science, a knowledge of chemistry such as the high school can and should give is of the utmost value as a matter of economy and of protection gainst imposition. In fact chemistry touches the daily life of the individual on all sides.

Although chemistry as taught in the high school should be eminently practical, it would be absurd to attempt such instruction without first preceding it with exercises in formal chemistry. Then too formal chemistry answers many of the requirements demanded of those subjects chosen for their cultural value. The high school, however, is not a place for the making of specialists, nor should high school chemistry be taught solely as though it were the initial stage in the evolution of an expert chemist. Still, in any attempt to make chemistry serve the purpose I have indicated, a certain amount of formal chemistry is desirable and indispensable. Very little good would come from teaching practical chemistry other than along scientific lines. We must not forget, also, that many of our pupils are preparing for college and that the high school is expected to meet the college entrance requirements in this as in other subjects. However, I believe that at a certain stage of the study it is practical to differentiate the work of the college preparatory students from that of those who are not preparing for college. Those preparing for college would continue the work in formal chemistry, those not intending to do so would receive instruction along entirely different lines.

I would consider the following plan suitable for securing the results indicated as being desirable:

First, I would give to all pupils instruction in formal chemistry for one-half year. This time should be sufficient to thoroughly master:

a. The necessary introductory work which, among other things, should treat *at some length* of changes in matter, and of the close relation between chemistry and physics.

b. The following elements and their compounds: Oxygen, Hydrogen, Chlorine and Nitrogen.

c. The Atmosphere.

d. Acids, bases, and salts.

e. The relation of the different forms of energy to chemical action.

f. The fundamental laws and theories of the science as found in any of our standard high school texts.

Incidentally during this time much would be learned of other elements and compounds in addition to those I have named.

Beginning with the second half of the year I would have the pupils who are not preparing for college take a hurried survey of a few of the more important inorganic substances not yet studied, after which they would take up the study of carbon and its compounds, placing particular emphasis on the latter. In addition to the oxides of carbon, I would wish them to know something of each of the following groups of organic compounds, namely: The hydro-carbons, alcohols, aldehydes, ethers, acids, ethereal salts, fats, glycerine, and soap, carbro-hydrates, benzine and its derivatives.

I would now consider the class prepared to receive with profit, during the remainder of the year, instruction in some of the applications of chemistry. The time remaining would not permit of any very extensive treatment of all the topics I shall name; but some of them could be studied quite thoroughly, while others could be gone over more rapidly.

I would consider the following subjects as applicable to this part of the work: Impurities in water; methods for purification of water; sewage and its disposal; fuels; illuminants and lighting; the chemistry of fire and fire prevention; disinfectants, antiseptics, deodorants; ferments and their work; methods of testing milk and milk products; and methods of testing the purity of other staple foods.

If the class should happen to be composed entirely of girls, or if it is possible to give separate instruction to the girls, they should be taught the chemistry of cleaning, of the laundry, and of cooking.

I believe that instruction along these lines in the schools of any community would in time create such an atmosphere that the most modern methods for safeguarding the public health would be demanded by the people.

I know of no manual that includes all of the subjects I have named. The absence of a manual would require the use of the lecture method in the class room. An abundance of simple experiments, however, can be gathered from the literature extant on these subjects, and, if properly correlated with the instruction given in the classroom, would arouse a degree of enthusiasm unknown to the average student in chemistry.

I doubt if any one would dispute the desirability of giving such a course in chemistry to high school pupils, but the objection may be made, that lack of facilities will not admit of giving chemistry to all

pupils, and lack of teaching force will not admit of the differentiation I have mentioned. True, what one can or can not do is to a great extent a matter of local conditions. Perhaps no one of us is working under ideal conditions, and it is "a condition and not a theory" with which most of us must wrestle. I have not in my own work, as yet, been able to put into practice the exact plan herein outlined. I have, however, from time to time injected into the usual work in formal chemistry instruction of the nature indicated. I have also taken individual students through a portion of this work by arranging a series of experiments for them to perform in the laboratory, and giving them references from the literature on the subjects of their experiments, and I have myself seen the fruits of some of this work in its practical application in the home.

We are attempting at Wilkes-Barre to give to the greatest possible number of our students instruction in chemistry. To do this it has been necessary to retain some features of the old style method of teaching this subject but in view of the importance of the science, and of the results we have secured, we feel justified in continuing our present method until fortune favors us with better conditions.

We are at the present time giving instruction daily in chemistry to 131 pupils. One hundred and seven of these are third-year pupils. The others are mostly graduate pupils who have returned for extra work, some to make additional preparation for college. A few belong to the fourth-year class. The third-year pupils come to me in sections. In the experimental work I gather them about my table and, with the help of an assistant, perform all experiments myself, but give the pupils every opportunity for handling material and observing details. I would call it a modification of the old method of class recitation principally, with demonstrations now and then by the instructor. The graduate and fourth-year pupils are doing laboratory work. This gives those who are getting ready for college an opportunity to prepare a note-book. It also gives to others who show special aptitude, or indicate more than ordinary interest in the subject, an opportunity for doing advanced work. It will be some time perhaps before conditions in the average high school will warrant giving individual laboratory instruction to all pupils. I am not quite sure that it would be advisable to attempt it unless the matter of expense is not to be considered. We all know that a certain percentage of our pupils are more or less indifferent with regard to all of their school work. These are the ones who always make trouble in the laboratory. Why is not a sifting out process somewhat similar to the plan I have outlined advisable, rather than to waste material on pupils who will never quite understand what they are doing nor why they are doing it? This plan is not inconsistent with teaching some of the applications of chemistry as outlined above, but would require a slight modification of the method given. All third-year pupils could be given the work specified as desirable for those not going to college. Fourth- and fifth-year pupils preparing for college would continue their studies in formal chemistry. The other laboratory pupils could either verify for themselves the experiments in applied chemistry which they had seen the instructor perform, or supplement that work with experiments new to them.

I am aware that any suggestion of departure, as to subject-matter or method, from that which is old and tried is subject to criticism, and should receive careful consideration before being put into practice.

I have no doubt in my own mind as to the advisability of attempting to put into practice the suggestions herein made. If this body thinks the plan I have outlined worthy of discussion, I shall be pleased to hear an expression of opinion on the subject.

Before taking up the discussion of this paper the chairman named the nominating committee for selection of members of the executive committee for the ensuing year, as follows: Messrs. A. H. Wills, Scranton; W. A. Wilson, Milton, and L. J. Ulmer, Williamsport.

In the discussion that ensued, Mr. Welter wished to explain further the meaning of practical chemistry. In his girls' class they have tested foods for adulterations; baking powder, tea, butter and cheese have been tested with very enlightening results. He spoke of the importance he put on these tests of articles of food used in almost every home, for thus attention is directed towards the home and domestic life. The daily round of home duties is thus shown to have a higher place in the economy of life than is usually accorded to it.

Mr. Wells, of Scranton, approved of the plans suggested in the paper for the study of chemistry. He considered the suggestions for adapting it to needs of daily life admirable. He has difficulty in separating his classes, the boys from the girls; and the students preparing for college and those who are going no further. He said

that the investigations in the high school of a town in Massachusetts had shown adulterations in food before the much needed Pure Food Law was passed, and these had awakened the people of the town to the dangers of adulteration.

Mr. Wallize has tested patent medicines in his school and shown the injurious effects of some of these on the health of persons who take such nostrums.

Mr. Ulmer believes also in putting most stress on the practical side of chemistry. He spoke of the interest aroused among the pupils by some qualitative work attempted in the Williamsport high school.

The Chairman asked that some one present should tell of his study of local industries, if any one has attempted this.

Mr. Wells has had his class visit the mines, breweries and stove works in Scranton with very interesting results.

Mr. Pennypacker asked some one to answer the question: Shall experiment work precede text-book work?

Mr. Stark replied that some experiments might precede some follow the study of text, but often it is of little account which comes first.

Mr. Henschaw spoke of the use of the lantern in connection with work in chemistry and physics. He considered it an invaluable aid.

A suggestive paper on "The Essentials of Geometry" was read by Mr. W. L. Peake, principal of the Sharon high school on the

ESSENTIALS IN GEOMETRY.

That teachers know why they are teaching geometry, and that they keep this reason in mind are of vital importance. It might be well, considering the scope which our subject covers, first to define briefly the purpose of geometry in secondary schools, and then to discuss the ways and means of accomplishing those ends.

It must not be overlooked that geometry holds a foremost place in the high school curriculum, both for its culture and practice. The former in my mind holds no inferior place to the latter, and the latter needs no argument to prove its value. As an exercise in logic it probably has no superior. We consider, and consider aright, that a pupil has good powers of thought who can in his recitation in geometry reason from one equation to another, or from one statement to another, and can give clearly and precisely the authority upon which each statement is based. And we should expect a pupil of that kind to do well in other subjects for he has developed the power to think and realizes that power to the extent that he is self-dependent. The fact that a pupil can be definitely right or wrong, and if the latter, can discover his own mistake, is the thing that makes him safe to stand alone. He needs no support. His own proof of the truth is enough.

Closely allied to the power of thought is the power of expressing what one thinks. The two go hand in hand, one is almost useless without the other. Along with these two and the practical knowledge that may be obtained stand those objects of minor importance, that is, those which do not require particularly the study of geometry. Such are relation, accuracy, habits of neatness, order, truth and attention.

Geometry is a continuation of mensuration and is so continued that it furnishes a proof for everything done in mensuration. It is the "why" of things done before. Pupils who have never thought about the reasons for doing things are confronted with a subject that makes them reason whether they want to or not. Here then begins the difficulty, and the burden is with the teacher to teach pupils to reason.

In that geometry necessarily begins with seemingly dry definitions and drier proofs, the teacher has much in his power whether the pupil like or dislike the subject at the start. Yet with a little ingenuity on his part by showing that these points, lines and angles are of practical value, that they are the engineer's tools, the pupil will be ready to "dive below." The fact that something of practical value is to be taken up is an encouragement; and this phase of the subject should not be lost sight of. With the definitions lies a good beginning. Rightly learned and rightly understood they are the fundamentals. They need not be given as the author does but rather in any clear and precise manner and such that may be demonstrated. His mistakes may be rectified by showing how little his statement means better than by studying more.

Coming to actual theorems, it is most necessary that a pupil know first what he is to prove. He cannot proceed further unless he knows the end for which he is working. He must know theorems, and I would say, word for word with the author, and it often helps with the recitation if he knows them by number according to the text-book. The hypothesis of each proposition can be obtained from his knowledge of its wording, and if he understands the latter clearly the former is easily stated and he may proceed from thence to proof and conclusion. In proof we must insist upon precise reasoning; every equation, every statement must have authority and in such a manner proceed to conclusion that there can be no doubt left in the mind of either teacher or pupil that the latter is completely master of it. To enable him to explain

well, and to bring out the points, for which the teacher is having the explanation, by answering questions relative to his solution, the power of expression is one of the first requisites. And if in mathematical propositions he is compelled to give his statements in a clear and precise manner, he will by force of habit do the same in his other recitations. One professor I have in mind answers the question, Why do we study mathematics, by three simple words, "To be precise." It is the habit of some pupils to omit seemingly non-important words or phrases in the statement of a theorem, which if we undertook to prove and prove according to its reading we would find ourselves doing the impossible. As for example take the theorem, "The perimeters of two regular polygons of the same number of sides are to each other as the radii of their circumscribed circles and also as the radii of their inscribed circles." The phrase "Of the same number of sides" might be omitted and the untrained pupil would scarcely note the difference. Here then is our opportunity to train the pupils mind to be so exact in explanation that no fallacy can be found. It is not my purpose to follow up this plan before the class to such an extent that it seems extremely embarrassing and consequently discouraging to the pupil, but only so far that he may see his own mistakes. In this the teacher must use his own judgment.

The matter of relation of one thing to another can be very successfully dealt with in geometry. It is often the complaint of teachers in every subject, that the pupil can learn a certain thing well and seemingly understand it, yet, when stated in a different way, it is to him entirely new. The same holds true in geometry. Different letters and different figures representing the same conditions are a puzzle. A change of letters and figures is a matter to be taken up with the first demonstration. Then the pupil will at once begin to see something besides the letters at the angles of the triangle, and will soon begin to perceive solutions which the letters and figures represent. The form of a geometrical figure may help materially in remembering solutions, yet while having the one figure in mind, he will not forget that it is not the only one which represents the given conditions, if taught at the right time that there might be other figures. Parallel lines drawn vertically look strange to a pupil who has always seen them drawn horizontally, yet he soon becomes accustomed to them drawn in any direction. So with the triangle, the base is the line upon which the other part rests; the pupil doesn't stop to think that the same may be above the vertex, nor that the base may be a vertical line with the vertex to the right or left. In reducing a polygon of six sides to a triangle, it doesn't occur to him how to reduce one of seven or eight sides unless demonstrated. But having had all these relations, and similarly other relations pointed out to him, the pupil gradually approaches that point where he can, according to Carlyle "count a thing known" for it becomes so "stamped on his mind that he can survey it on all sides with intelligence." Then we as teachers have the opportunity to exercise that common sense in pupils which plays such an important part in the life of every man or woman, whether he is to pursue his studies in college and the university or enter business immediately upon the completion of his high school course. For what is common sense but perceiving right relations, that is, forming an hypothesis that covers every possible conception of the theorem as stated, and proving its correctness. In this connection geometry noticeably aids those who do not expect to enter college as well as those who do, and thus we come to see its real object, that it is not primarily to learn geometrical facts, but is to teach the pupil to use his mental powers and to concentrate them on his business, that is, "to think and to teach himself the common object of all true teaching."

The powers of attention and concentration which a pupil strengthens through the study of geometry are immediate results of being able to understand well, and of being able to stand on his feet and tell what he knows. At first when his mistakes in expression and reasoning are pointed out to him, and when he sees how meaningless his sentences are, he may be a little loathe to stand up before his classmates to explain, but day by day as he becomes more familiar with the mode of recitation, he will make material gain. Being conscious of an almost complete failure, he will note more carefully how others give the same explanation and at least try to express what he knows about the proposition under consideration. Thus the thought and satisfaction that he can do something for himself will act as a stimulus for a better recitation next time. From this we may readily see how the pupils attention in the classroom and his application outside will be materially aided.

Accuracy, habits of neatness and order can be dealt with in geometry as in other subjects. As for truth, it may be said that geometry creates a reverence for it. If the pupil gets the idea that nothing is true unless proved, he is on the right road to mathematical investigation and application.

Thus far, we have dealt with the purposes of geometry teaching and how classroom work can be a valuable aid in furthering

them. We will now turn our attention to what should be taught to obtain those ends, how many if not all of the written propositions should be included in the high school course, and how many of so-called originals should be taken up.

In answering these questions, it is necessary that we make a division between practical and abstract utility. We have with us both pupils who expect to take up mathematics in advanced schools and those for whom the high school is the last. So it is well that this matter is a question of thought. We care not to burden the mind of a boy or girl with a lot of useless theorems. Our point is to get useful results from our efforts, to prepare for life and incidentally for college, for what gives a good foundation for life work does the same for the college course.

A great number of proofs, as given by most text-books, are those not particularly needed for advanced work but used to make advanced work less difficult. They are the proofs that lead to nothing practical and take up the time that might be used to better advantage. Some are those which involve very little reasoning, but which must be memorized, others are those that have little or nothing to do with problems he will ever have afterwards except perhaps those based upon the proof by the author of the text-book. Of the former I would cite the construction problem. To divide a line in the extreme and mean ratio; of the latter kind of which there is a larger number, I would cite the theorems in maximum and minimum polygons. It is well to know how to divide a line in the extreme and mean ratio, but why burden the memory with its proof which will be forgotten in a day. There are other more interesting ways of training the memory and, moreover, this is not one of the primary objects of teaching geometry. The latter class of propositions it may be well to teach if there is plenty of time, but in the average high school, it would be more to the advantage of the pupil if some of the time that is spent upon this kind of propositions be used in solving originals that show the practical application of the fundamentals.

Propositions for which the pupil can see no use are a drudge to him. Nothing deadens interest more quickly or more surely than the fact that the proposition under consideration means nothing to him. It is not always possible to show why this theorem or that problem is important by a reason of the sequence, yet if he feels he can do something with what he has learned he will investigate further more energetically. There is no way to accomplish this end better than by solving two or three short originals, which involve the principles laid down in the proposition.

No doubt you have all seen pupils who apparently knew a theorem, could prove it and answer all questions relating thereto, yet when it came to applying the knowledge obtained they were unable to begin. A few originals given right at the time with the proof will eliminate a great part of this difficulty. Original demonstration therefore, I believe to be a very important phase of geometry and a teacher that does not give much attention to it is failing to bring out all that the subject stands for. Surely if the pupil does not in some way put his theorems in practice he can not appreciate the import of them, and will when confronted with a problem involving the same principles a little later, either in business or in college, have only a vague notion that he has ever had anything like it before. Yet a little practice with every principle learned will teach him the real thing—that those principles are tools which he can use and use to a good advantage. I believe it to be more expedient to know fewer theorems and to have those rightly known than to have a whole mass of something that means that the pupil has had geometry only in name.

The teaching of originals therefore goes hand in hand with that of written theorems. Illustrative exercises should be proposed which involve the principles of the day's lesson, and the pupil made to work them out himself. Later, other methods are studied and the same exercise can be dealt with in a different way. The miscellaneous exercises given at the end of each book of the modern text-book are valuable in helping the pupil select a right method. In doing this, he must recall all methods previously used and in short, have all the tools in mind which he has ever used before. In hard originals great credit is due a pupil, even though he use a roundabout method in solving. A long one develops as much power and perhaps more as it involves more reasoning. Yet the pupil should be taught to take all the principles learned and search for the one that most nearly fits the particular exercise. And thus every pupil who can learn geometry at all learns to do something for himself and will take great interest in it. Every proposition comes to be of use and an inspiration to the pupil to work and think for himself. And if he learns the use of geometrical principles in solving originals, he is prepared to use the same in everyday life, not only in practice but in the study of advanced subjects.

In closing, it might be well to suggest a few ideas as to the conduct of a recitation. In the first place, and that which goes with-

out saying, the teacher must know his subject, not merely that he can work all originals and prove all theorems but he must know the order of propositions, how every principle is applied and, in short, have the whole subject at his tongue's end. Secondly, the recitation should be conducted to benefit the greatest number. Hardly a portion can be given to the individual except what he may learn from his own explanation and from the facts brought out by a well-defined method of questioning. If a pupil needs individual attention, he may get it from his teacher at some other time. Thirdly, only those propositions should come up for much time that involved difficulties to be cleared up for the class. Fourthly, very little time should be taken by pupils in writing upon the blackboard. To have each pupil write out his proof is a waste of time that might be better spent. It has been my experience that a figure constructed on the blackboard is sufficient. The oral explanation becomes thereby a spur to the pupil to know things before he attempts to tell them.

The discussion was opened by Dr. George W. Hull, of Millersville Normal School, who spoke of his hope of increased efficiency in mathematics through the work of this section of the high school department. [We sent MS. of Dr. Hull's remarks to him for revision, but have not got it back up to time of going to press. It may have been lost in the mails.—ED.]

Mr. Wallize, continued the discussion, agreeing with Dr. Hull in the belief that demonstrative geometry as pure logic is often foisted upon pupils at too early an age, hence the dislike which many have for this subject. He endorsed Dr. Hull's suggestion for making pupils familiar with geometric forms and facts in the grades, thus giving them a storehouse of important geometric truths, so that they may be ready when they have grown more mature to grasp the rigid logic of deductive reasoning for which the geometry of Euclid stands.

Miss Mathews said she had found it of great advantage in her classes to preface the work in demonstrative geometry with some work in measurement and construction. Referring to the essentials of geometry she spoke of the importance of the fundamental concepts. The necessity of good definitions and the function of the axiom as an assumed truth rather than a self-evident one. She also called attention to the relationship between geometry and algebra and the help it gives to pupils to state certain truths, as the laws proportion, both arithmetically and geometrically.

Dr. Hull was questioned as to the feasibility of adopting the course in geometry recommended by the Committee of Ten in the grades. He was enthusiastic for its trial.

Dr. Ling, of Allegheny College, Meadville, spoke of his interest in the section, and his desire to talk over, with secondary teachers, some of the difficulties which confront both secondary schools and colleges. He felt that much mutual help would result. He did not wish to carp at or criticize the secondary teacher but he did want to help him to a high standard. His plan is for the well-equipped teacher in mathematics, one who has a broad outlook from his study of the higher mathematics, especially of calculus. He spoke of the benefits derived in Colorado from a well-planned outline for the teaching of physics. Such an outline could be worked out in the state by the specialists in the various subjects and might become a working basis for teachers otherwise but poorly equipped.

The Chairman then spoke of the work that has been done in the different centers. He felt that much has been accomplished in the right direction and a spirit is manifest in most parts of the state to coöperate toward the improvement of the teaching of mathematics and science.

He called attention to an invitation received by the section to send a delegate to the annual meeting of the American Federation of Teachers of Mathematics and Natural Science; and he suggested that the section might send a delegate, if not to the meeting this year, on January 1, 1908, at least to that the following year. He asked also whether the policy of work at local centers is to be continued, or are other methods to be suggested?

Mr. Breidinger and Dr. Hull spoke of the benefits already evident from the policy of the present committee.

A motion, made by Dr. Hull and seconded by Mr. Breidinger, to approve the work done was passed unanimously.

Mr. Stark considers the section was in good condition to develop into a strong association.

Mr. Amos Chamberlain, of the Wilkes-Barre high school presented the following paper on

MANUAL TRAINING IN HIGH SCHOOLS.

This paper involves the relationship of two ideas—manual training as a movement in education, and the high school as an institution in the public school system. Whereas there may be a comparative uniformity of opinion as to what constitutes a high school, there is certainly a wide range of opinion as to what constitutes manual training.

There are three phases of the manual

training movement as it exists to-day. These are (1) motor training; (2) industrial education; (3) trade instruction. Whenever I hear the word manual training used, I am anxious to know along which of these three lines of thought the speaker is following. It is part of our purpose here to analyze each of these view points and note in what relation the high school stands to them.

The term "manual" training is a very unfortunate and unsatisfactory one. Obviously the expression itself means hand training, for "manual" means pertaining to and of the hand. But if manual training is hand training, then we can with equal consistency call mathematics "eye" training, and reading "ear" or "voice" training, for with all of these we would simply be naming certain school subjects after the particular physical organs that are used in dealing with them.

Manual training is mind training. It is an element in the new education. We hear much nowadays about the "new" education. The new education of any age is but the education of that age in comparison with that of the preceding age, for education is a changing factor. The end of education is the same as it has been through all history—the fullest development of the mental life, but the means have changed, owing in part to a better understanding concerning the nature of the being to be educated.

Almost until the present decade the child has been regarded as a receptive being, so far as our educational practices have been concerned. The child has been sent to school to learn, to receive, to "get" all the information he could. The teacher's duty has been to impart this information to the child. The teacher has been the active being of the school-room and the child has been the passive.

If there is any one great line that separates the new education from the old, it is the changed and more rational attitude toward the nature of the child. The child is now regarded as an expressive being, capable of expressing himself not alone by means of spoken and written language, but by means of gestures, by means of drawing, by means of construction. In a word the child is all expression.

Scientists are continually making discoveries which permit us to draw conclusions of utmost importance in our work as teachers. In 1821 Sir Charles Bell discovered that there is one set of fibers transmitting impulses from the peripheral endings to the brain centers, and another set transmitting impulses from the brain to the peripheral endings, in other words, that the nerve fibers of sensation are distinct from those of motion. The former are brought into action in impression and the latter in expression. It is evident that when the processes of expression act in conjunction with those of impression, a clearer and more lasting impression is made. What takes place in the brain, neurologically, upon this occasion, has not as yet been definitely determined, but it is reasonable to believe that the affect of motor expression upon impression can be explained along anatomical and physiological lines—that the activity of motor nerves and centers physically affect the activity of sensory nerves and centers, having their correlated mental effect in the processes of sensation and perception. Certain it is, that we know those things better which we have acted upon, and the old maxim "learn to do by doing" might be modified into "learn to *know* by doing."

This is the idea involved in the kindergarten and in manual training, that impression is intensified and made easier when it is accompanied by motor expression. A child's idea of a cube is better after he has handled it than when he has merely had it shown him. This intensifying of impression by means of appealing to motor expression has been called motor training. Even this term is no satisfactory substitute for "manual" training, because the aim is not so much motor training as it is mental development.

Manual training is mind training in so far as the mind is given rich impressions by means of having those impressions accompanied by motor expressions. Percepts leading to concepts of special relations, and form, and magnitude are richly made in this way. The angular relationship of planes is realized readily by a boy who tries to plane a true edge to a piece of wood. No one knows the true meaning of an inch or foot better than boys working in a manual training school. No one has a better notion of the resistance of materials, of inertia, of force, and energy than students in a machine shop. I do not mean that class instruction in these matters is useless, but I do mean that when manual expression is involved in mental effort, the desired results of that mental effort are hastened. This is the basis of laboratory work in physics, chemistry and biology. This is why we are using the sand table in teaching geography, and the building of model stockades and block houses in elementary history.

From the standpoint of motor training, manual training seems not so much an isolated element in the school curriculum as it is a method to be applied in almost all teaching. It is dynamic teaching as opposed to static. Manual training, as motor training, has special application in the grades,

rather than to the high school, during those plastic periods of a child's life. It is at this period when skill can be most easily developed—making elementary instruction in the arts unnecessary in the high school and permitting the instructor there to do more advanced work.

We come now to manual training as industrial education. Here again we are confronted with an ambiguous term, "industrial" education. I use the word industrial in the sense that the economist uses it. Man in his economic advancement has passed through different stages, the hunting stage, the nomadic, the agricultural, and the trades and commerce stages. We have now entered a new era, the industrial stage. The form of education best adapted to this age is termed "industrial" education.

That form of education will be most popular among a people which is most in harmony with the ideals of that people. Chinese education, rigid and narrow, existed through centuries because it expressed the characteristics of its people. Greek education was refined, indicating a refined people. In an industrial age, industrial education is the most rational because it expresses the ideals of the people of an industrial age. Industrial education, as the term is used here, is not narrow but varied and broad. It is that form that meets the demands of the age at every possible point.

What are some of the demands of our present industrial age which manual training can fulfil? Manual training is practical. The present age demands practicality. It demands reality. Boys are given a taste of the reality of processes of manufacturing in our manual training schools. And surely manufacturing is the prime reality of our modern industrial life. The present age demands that the observation be trained. One of the most learned men I ever have had the honor of hearing speak once said that in passing through a large industrial establishment he knew no more of what he saw than would some intelligent dog. And yet industries form the very backbone of our social life. Surely it is that there must be something in the training of citizenship that will enable a man, regardless of his vocation, to observe the processes of industry and appreciate them. Manual training furnishes the necessary apperceptive material at this point. The present age demands executive ability. Executive ability is often said to be the capacity for doing things. If this is so, manual training is executive through and through. Whereas the old faculty psychology has now quite generally passed away, nevertheless it is true, that the mind develops through desirable habits. We may say that through the suitable adaptation of material and design to purpose, and through the persistency of effort that is involved in the construction of a bookcase, or in the making of a model engine, the mind is susceptible to the formation of executive habits, of prime importance in the age in which we live.

So far I have treated the manual training movement as though it dealt exclusively with the education of the boy. This industrial age has a tendency of weakening the very foundation of our social life, the home. And this is being done through a false conception of what constitutes the education of the girl. It has too often been supposed that the career of a housewife is one not demanding educational preparation. Then, too, there are innumerable callings open to women that were not open a few decades ago. Yet when we bear in mind that 90 per cent. of the income of the average American receiving $500 to $1,200 per year is expended for rent, food, shelter, and clothing for himself and family, and when we further remember that these expenditures are for the most part under the direction of the housewife, then the education of the girl is of a most important economic consequence. Included in the manual training movement, therefore, is sewing and cooking. In some cities these and wood-working, etc., are under the same supervisor. Their importance as elements in the school curriculum, in view of the foregoing facts, needs no further argument. The manual training movement therefore, contributes vital elements in meeting the educational demands for both boys and girls in the training for citizenship in an industrial age.

Manual training is confused with trade instruction by a great many people who do not bear in mind what trade instruction and a trade school really are. The opinion prevails that instruction in the mechanic arts, in conjunction with certain academic subjects would constitute a trade school—they confuse the trade school with the "technical" high school. Now a trade school is an institution whose sole object is to train craftsmen, to produce producers. Its aims are purely economic. In its aims, therefore, the trade school differs from the manual training school, which is an institution for general culture. It differs as widely in its methods. The trade school that is of the greatest economic importance is one whose students are already bread-winners and who, in the trade school, receive instruction along the lines of work that they are engaged in during the day. This means that a trade school must have in its curriculum every line of work that is

performed in the community. The trade school furthermore, is generally an evening school.

The term trade instruction has here been confined to the mechanical arts. It cannot be denied that the high school is already giving trade instruction in such branches as stenography, bookkeeping and typewriting. But so far as mechanical branches are concerned it would seem that the sort of trade school that will most fittingly meet the industrial demands of business men is the type of German continuation school.

As to the three phases of the manual training movement, motor training, industrial education, trade instruction, to which does the modern high school stand in its closest relation? Manual training as motor training belongs in the grades. The pupils there are of that age when so much can be done for either good or evil, and in the succeeding years development along industrial lines will be rapid or retarded, according to the character and amount of this earlier training. There are students of course who have never received instruction in manual training until they have reached the high school and yet have done creditable work, but these boys have in most cases played with tools during their plastic years. Some educators hold that there is no disadvantage in deferring manual instruction until the high school, that pupils do just as good work then as they would do with previous instruction in the grades. Be this as it may, with manual training in the grades these pupils in the high school could be permitted to work on greater problems in the high school which would require more thinking and be of greater use to the student.

Passing on to the high school the manual work develops into a new phase—an element in industrial education and it is in this phase of manual training that the high school stands in its closest relation. This relationship has given birth to a new public school institution, called at first the "manual training" high school and later the "mechanic arts" and "technical" high school. The latest term "technical" is as unsuitable as the others for these schools are not technical, for technical education means training for a special calling or vocation, whereas the manual training high school is as cultural in its aims as is the older classical high school, the only difference being in the selection of its cultural material, the one drawing from scientific and practical materials and forces, the other from classical and humanitarian. Both have their place. One forms the basis to mechanical and engineering pursuits, the other to literary pursuits, law, medicine and theology.

Realizing the place of the manual training high school in our educational life, it may be well to close by glancing at the marked characteristics of such a school, the curriculum, the equipment, and the teachers. For both boys and girls the general plan of instruction in the manual training high school comprises prescribed courses in English, mathematics, physics, chemistry, free-hand drawing and design, and in some cases German, French, history and biology. For boys, shop work and mechanical drawing are prescribed in each year, and practice is given in caring for boilers, engines, dynamos, motors, etc., which constitute the heating and lighting power plants of the building. For girls, courses in domestic science and domestic art are prescribed, including work in cooking, the preparation and serving of meals, invalid cooking, marketing, laundry methods and materials, management of the house, plain sewing by hand and machine, dress-making and millinery.

The selection and adaptation of the academic branches in a manual training school are as important as are the manual branches themselves. The manual arts lose their cultural value when separated from academic studies and becomes simply trade instruction. English is of great importance not only as a formal study of grammar, composition, and rhetoric, but the use of English in connection with all work, in the shop as well as in the usual class rooms. The teacher's English in the shop should be as well guarded as it should be anywhere else, and the student's English should be cared for here too.

Literature in the manual training high school is of vast importance. The development of a desirable literary taste is of supreme importance. Whereas our industrial age calls for a relatively practical education it should call for a moral education too, and that old question of character formation comes up as strongly in the manual training school as it does anywhere else. The love of good reading is of untold magnitude in character building and this should be the foremost aim of literature in the manual training high school.

What can be said of literature can also be said of history. History is of importance in the manual training school because history deals with men. And man and the love of fellow men must never be lost sight of as an aim in education. Well does Professor Ely say: "We forget that there are two kinds of poverty one a lack of goods for the higher wants, and the other a lack of wants for the higher goods." We are in a danger in the manual training school of promoting means for the production of goods for the higher wants and the neglect

of creating wants for the higher goods. We are liable to consider too strongly the supply of producers, of workmen, and neglect at the same time to develop in these workmen the wants for higher things in life. Literature should develop these wants.

In its equipment, the manual training school is of course unique, for it must have not only the usual class rooms, but it must also have its laboratories, its shops for the boys, and its kitchen and sewing rooms for the girls. All should be modern and well kept. The hygienic precautions toward cleanliness should be as strictly observed in the shops as they are in the class rooms. Unusually efficient janitor service should be furnished the manual training school, and as for the students being called upon to sweep the shops, it is as unreasonable as calling upon them to sweep the class rooms and the halls.

Behind all the forces of the manual training school, designed to educate the boy and girls, there stands that greatest force of all—the teacher. So far as the manual branches are concerned there are three factors in the makeup of the ideal manual training teacher—skill as a mechanic, skill as a teacher, and character as a man. In the early days it was thought that the first requisite was sufficient. But these were the days when few people realized that teaching was anything more than imparting information. Then came the time when it was learned that the teacher must also know and sympathize with those who were to be taught. Happily some of the older men, who were made manual training teachers solely on account of their skill, came to know, and even to love, boys under their charge. More fortunately still, normal schools have taken up manual training and are sending out teachers fitted for teaching manual training branches in woodworking, and almost every elementary line, although as yet, the schools training teachers in iron work and the higher branches are very few in number.

The third requisite—character—has no more application to the manual training teacher than to any other teacher, and no less. The dealings of teacher and pupil are closer, more individual, in the manual arts, than in most subjects. Whereas no person of weak character could likely secure a position to teach manual training, there have been instances, in earlier times at any rate, when teachers have used tobacco and have even been profane in the manual training room. There are chances for moral lessons in almost every incident that may arise. As a teacher of manual training once put it, "I am not satisfied as a result of their work with me that my students should become better workers, and know more of tools and materials unless they are also enabled to lead better lives."

In concluding I desire to leave the following propositions:

1. Manual training in high schools is most effective when it is preceded by manual courses in the grades.

2. The efficiency of manual work in the high school is dependent upon its being properly correlated with academic branches.

3. In high schools there should be manual work of some kind for girls as well as boys.

4. The manual training high school and the trade school occupy separate provinces, one cultural, the other special, and the latter outside of the present school system.

At eight o'clock, in the High School Auditorium, Dr. J. P. Gordy, of New York University, gave the annual address on the subject of Education and Citizenship. He held the rapt attention of his audience throughout the entire address which was not only intensely practical but full of interest and inspiration.

SATURDAY MORNING.

THE devotional exercises at the closing session of the Department which was held in the Department of Public Instruction, were led by Rev. H. N. Bassler.

Professor J. A. Stewart, of Altoona, read the following paper on

NEEDED HIGH SCHOOL LEGISLATION.

In a government of the people by the people it is fair to affirm that the basis upon which the government rests will be the average intelligence of all the individuals constituting that state. Another statement presents itself. Government has for its basis the aggregate of the intelligence of the individuals governed. A large class of highly educated and thoroughly cultured subjects may furnish a high aggregate and a successful government. This latter statement of the relations of subjects to their government does not seem to apply to the people of the United States. It is assumed that the subjects of the United States are entitled to the enjoyment of certain inalienable rights, among which may be classed education, suffrage, etc. Education should prepare for suffrage. Does the ability to spell, to read, to write, to perform the elementary operations in Arithmetic prepare for intelligent suffrage? So much education fits the individual citizen for control by a selfish politician. This condition renders certain two classes of citizens, the ruling and the ruled, with intermediate grades in influence and power. All these intermediate grades affiliate; sometimes with the

rulers; sometimes with the ruled; sometimes, separating, the parts act in harmony with both classes. Is this result, this condition, intended by the constitution of the United States or by the constitutions of the several states? Does the spirit of our customs, our laws, our literature teach us that a social condition caused partly by such a limited education is in accordance with the real personality of an American citizen?

It would be interesting here to digress and discuss: First, that a large class of boys and girls will not receive more than the limited education named above. Having been compelled to receive so much, they become indifferent to school work. Secondly, a large class who are unwilling to expend the time and effort necessary to secure the enlarged education. They are practical. They must earn money. Thirdly, a class whose parents think their children already have more education than they had, therefore they must leave school, get to work, and earn something to aid in support of the family, also prepare themselves for their future life work. This, however, is not the purpose of this paper. Still, in passing, it may be said that a majority of these three classes never attain a position of independent manhood or womanhood in either political or social life. They are unable, of themselves, to prevent others from leading and "voting" them.

In every school district all over the state of Pennsylvania are pupils, boys and girls, who are fond of books, whose greatest pleasure is study; whose ambition is the acquisition of knowledge. The state owes these, the future men and women, an encouraging, fostering care. It has been asserted sometimes that the parents of these children are financially able to furnish this secondary—high school—education. Think of this assertion carefully. May it not be affirmed, without successful contradiction, that a majority of the parents of such pupils cannot see their way clear financially to meet the expense of three or four years at some preparatory school; afterwards, four years at college. If the preparatory education be furnished by a public high school, these same parents may be willing to make arrangements for the expense of a four years' college course. If this public high school is accessible from the home the probability of a college education is increased; and the possibility of one or two years at a normal school, in preparation for teaching becomes almost a certainty. The public high school ought to be accessible to every pupil of every school district in the state of Pennsylvania.

It follows, then that there is a necessity for its existence a necessity for its regulation by law; a necessity for a legal supervision of all high schools; and a looking forward and a prediction of results.

Will any citizen of a school district affirm that the high school is not a necessary element in the scheme of public education? Yes they will. Such remarks as follow are often heard. "My boy or girl already has more education than I ever had, and I have done very well in life." "It costs too much." "The taxpayers will not submit to the increased taxes." "I need the help of my boys, and mother needs the assistance of the girls in the home, and in making some provision for the possible 'rainy day.'" "My boy or my girl wants to quit school, mingle with the world, earn his or her own living, and be independent." "Perhaps this struggle, in early life, will eventually make them better men and women," etc. When the changed conditions of social and industrial life are considered; when a comparison of the conditions of the life of the present with that of forty years ago, these objections or nearly all of them to the high school lose their force. The same ambitions, reasonable and just, exist in the minds of the young people that existed forty years ago. Means which produced satisfactory results then will not now lead to the results which were successful then. More preparation is needed, more study of subjects that will discipline the mind and train the reasoning powers; more study of subjects that tend to produce continuity of effort and concentration of thought; more thorough training of such mental powers as will enable the pupil to absorb accurately, to retain correctly, and to reproduce as exigencies require. In a system of public education, every boy and girl whose ambition impels them to seek this advanced work is entitled to the privilege of seeking it. Every school district in the state is under obligations to furnish it to them. Existing legislation responds to this obligation. The districts are slow to avail themselves of the advantages offered. The sons and daughters of the directors, and of their neighbors, must be denied the privilege justly theirs. Their ambition impels them to seek advantages elsewhere which are withheld in the home school. They leave home and, at a heavy expense, seek that preparation for their life work which ought to have been partially obtained under home influences. Or they struggle to obtain the training, and at the same time earn their expenses. In doing this they are liable to enter upon their life work physically unable to meet the responsibilities thrust upon them. It is to

be hoped that school districts will not be so slow in adopting the present high school legislation, and in securing for their own and their neighbors' advantage the privileges which that law offers. When the present system of public education was first placed before the people of the school districts for adoption there was great hesitation. The same arguments were used then against the system that are now used against the high school. Twenty years after the passage of the first public school law, in the time of Thaddeus Stevens, Governor Snyder and others, school districts, scattered all over the state of Pennsylvania still maintained the old subscription school. In this connection an old publication, a "State-Book of Pennsylvania," by State Superintendent of Public Schools Thomas H. Burrowes, is interesting reading. Let it be repeated that the demand for enlarged equipment, by the continuation of studies which yield discipline and power, is so insistent that directors who do not recognize it fail to meet the obligations of the trust they hold as representatives of the people. Looking at the law establishing the high school as an enactment of the people by their representatives, no change in it seems necessary.

In speaking of the regulation of the high school by legal enactment, it is well to speak; first, of the course of study; second, of its enactment by law; third, of its compulsory adoption.

Can a course of study be uniform? No. Let the varied courses of study recommended by individual teachers and adopted by individual boards of directors be eliminated entirely. They may thwart all the advantage that ought to accrue to the pupils of the high school. Let a committee, appointed by the State Superintendent of Public Instruction, formulate a course of study. Let that course of study be inflexible, in at least three leading studies, and flexible in one or two additional studies. The rural high school could adapt it to its needs; the industrial city or borough could find in it expression of its wants. The inflexible part of the course of study would furnish that training and that power and that knowledge which would place the possessor on a creditable footing with schoolmates in higher institutions of learning, should ambition and opportunity open the way to a more extended education. This committee might consist of one county superintendent, one city superintendent, one normal school principal, one high school principal, one secondary school principal, private or endowed, and one college man, with the State Superintendent of Public Instruction as chairman. Is this committee too cumbersome? Perhaps. These different educational fields, however, have all an interest in this work. The course of study thus established could be embodied in legislative enactment.

Its compulsory adoption by school districts can be maintained and defended by the same line of argument that was successfully used in favor of compulsory attendance. Whatever right exists in the one case exists in the other. Compulsory attendance claims the right for the state to enter the home, take the child, and prepare it for citizenship. Compulsory adoption would furnish a fuller, completer preparation for citizenship to those pupils seeking it. The latter proposition seems to be more in harmony with the spirit of a government by the people. It would be interesting to hear the following question discussed: "Can the state compel a school district to adopt a course of study established by the state?" There is not time to discuss it here, nor does the present writer feel competent to do so.

This opens the way for supervision. Such an act was before the last meeting of the State Legislature. It was lost in the last days of the session. The enactment of a similar law, with any objectionable clause or clauses removed or changed, would satisfy the demand which called that into existence, the demand which convinced the legislators that such a law was a wise one for the well-being of the state. By that law supervision was established. It did not promise to be as effective as its advocates hoped. There did not appear to be any fixed course of study to which the supervisor could urge approach on the part of the authorities of the district. There was also an indefiniteness about a one-year's, a two-years', a three-years' and a four-years' course which boded ill to the best results of supervision. Let a course of study be established by enactment, let that supervisor hold the teacher or the authorities rigidly to this course, then supervision ought to be effective; then the pupils of the rural districts and of the boroughs would be secured their rights. Whether their course of study consisted of one-year's, or two-years', or three-years', or four-years' work, the first-year's work could be made the equivalent of the first-year's work in a city high school. If the course consisted of two-years' work, these two years would be a fair equivalent to the first and second years' work in a city high school. Thus through the entire course. As a result of these enactments

supervision will be effective. Pupils from the boroughs and especially from the rural districts will not be at so great a disadvantage when they enter a school of the grade of a secondary school. A normal school teacher will not say, "We suffer in our work from the uneven preparation of pupils coming to us from the rural districts." The high school teacher of the cities will not say the same. These pupils generally establish themselves creditably, but they have to endure many annoyances and some grief in securing that standing. Others have become depressed, discouraged. They fall into idle habits, or worse than idle, and give up their ambitions rather than endure the remarks which they accidentally hear.

It will be observed that no mention has been made in this discussion of any system of public education in any other state. As a Pennsylvanian, we are inclined to think that a system of public education which is satisfactory and efficient in Iowa migh not be adapted to the people of Pennsylvania. Possibly the system carried out so thoroughly in Massachusetts, would be a failure if transferred to Pennsylvania. The system prevailing in our near neighbor New York, so effectively organized and developed, from the very first to the very last years of school life, would be a disappointment to the citizens of Pennsylvania, if it were to be moved across our northern border and engrafted upon our state laws and institutions. There is a difference in the manner of life and thought of the people of these states and the people of Pennsylvania. There is a difference in heredity, in social life, in industrial life, in the foreign element of population. We are inclined to think that our system of public education must evolve out of our own lives and habits of thought. The gap between the grammar school education and the collegiate must be filled with a high school education that has grown up out of the needs of Pennsylvania people. What those needs are is a large question. This may be said without offense to any one. It is well to keep in view the ten per cent. of high school pupils who will continue their education after they leave the public high school.

What may be reasonably expected from the public high school? The high school teacher, the normal school teacher, the private school teacher, the college teacher will not bewail lack of evenness of preparation for their work. The ambitious boys and girls of the boroughs and rural districts will be encouraged and strengthened in striving for their ideals. The state will be furnishing and equipping a class of citizens for the future which will increase her power and dignity. Sparta took the child at a very early age, fed it, clothed it, trained it, found it employment in the service of the state. The state entered the home, took the child, developed the future citizen. The weak and delicate child, unfit for training, was exposed where it would die, or be taken up and cared for by some sympathetic Helot. Only vigorous boys and girls were adopted by the state. This system eliminated sentiment early in life; it produced machines controlled and directed by the state. Under such training the mother could say to her son, on going to war, as she handed him his shield, "With it, my son, or upon it." Hard, cruel, practical, with the large and better half of their capacity for enjoyment of life out of their reach. Does Pennsylvania want or need such citizens? In Athens, as a state, the same exposure of the delicate boys, and of many girls, but a recognition of the home, and a more generous training. The ideal entered into their lives and was an element in the child's development. Art flourishes. Literature arose. Liberty of thought and action was the boast of the Athenians. The Athenians, as citizens, only one-twentieth of the entire population —the other nineteen-twentieths being Helots, slaves, cattle. Does Pennsylvania want one of her children out of every twenty to be a free and independent citizen, and the other nineteen of every twenty to prepare themselves for the absolute control of the one? No. She wants the entire twenty-twentieths to be fitted for citizenship. Both these peoples thrill the nations of the world with instances of patriotic devotion to their country. Does Pennsylvania develop patrotism in subjects by these methods? No. And still the patriotism exists in Pennsylvanians. A teacher hearing a class reciting for some time about Sinon, suddenly closed his Virgil and asked, "Any good quality in Sinon?" "Yes, sir, answered a member of the class, "He was patriotic." Another answered, "He was fearless." He was a product of that kind of education and training—the state above everything. Pennsylvania wants to extend a helping hand to all her subjects, but especially does she need to encourage and to equip these ambitious pupils of the public schools who will in a short period of twenty-five years, become prominent citizens.

The shepherd gathers up, shelters and protects, in his arms the weak and sickly lamb. He cares for it until it numbers one of the flock. Nor yet does he neglect in

any way his care for the vigorous and healthy. This seems a fit illustration of the relation of Pennsylvania towards the children in the public schools.

The nurseryman supplies his customers with such trees as they call for. He plants his seeds in soil properly prepared. He cultivates the growing trees. Some are deformed. These are destroyed. Some are unsightly. These are trained and developed. They become vigorous and healthy. But note the care with which he cultivates, prunes and trims the vigorous young shoot, making it still more vigorous, more beautiful. Our state and the arboriculturist differ in their treatment of the hopelessly defective. Thanks to the civilization of our time and our country, the weak, physically, mentally and morally, are cared for by the state. In all other conditions the methods of the nurseryman and the state are similar and have similar purposes in view. How aptly, in his treatment of the vigorous tree, does he show us the duty of the state towards the ambitious pupil of the public schools. As prospective citizens the return, in future service, will be twofold.

The paper was briefly discussed by Principal G. D. Robb, of Altoona.

Principal A. E. Kraybill, of the Boys' High School, of Lancaster, presented the following paper on

HIGH SCHOOL ELECTIVES.

The subject suggests three questions to me: (1) Shall they be offered? (2) To what extent? (3) Who shall do the electing? Nineteen of us completed our high school course and graduated together. We had studied and recited together the same subjects throughout our course. There were no electives. I believe that the preparation which that course gave for future work was as valuable as any other would have been. Since then the school has kept pace with the progressive spirit of the times, courses have been added allowing a wider range of subjects from which to choose and still I sometimes wonder whether that school or any other school of its class has anything more valuable to return for four years' work than that original course of a dozen years ago.

Courses and electives are the outgrowth of the utilitarian or practical idea which more and more controls and dominates the character of our education. I use the term practical in its most commonly accepted sense—that which is most quickly and most easily turned into dollars and cents—chiefly the latter. No one for one moment believes that a technical course is intrinsically better as a means of education than any other. The only reason that any one ever presumes to give for its existence is that it prepares a boy more quickly for entrance into a technical school. The same is true of the technical course at college—I do not condemn it. We want it, we need it. I often recommend boys to take it. But I recommend it as a good financial investment rather than as a liberal education. This idea is still further developed in the recent introduction and development of the commercial courses which are more nearly a trade than an education.

I believe that every boy is entitled to a minimum of four years in the high school of pure unadulterated liberal education for its own sake before he enters upon his special trade or profession. I believe that he is entitled to at least so much of the education that makes for culture and for happiness, that fits him to become a joint heir of all the goodness and all the gladness of all the ages, that puts him into sympathy at times with the wayfarers of the spirit, "the few who hold earth's coin of less account than fairy gold." I believe in educating a boy first and giving him his trade afterwards. But if we are to be considered practical men in our community we must rob him of some of that time to prepare him for his specialty. My answer then to the first question—Shall we offer electives is a somewhat reluctant "Yes."

To what extent shall they be offered? All boys in the high school naturally fall into two groups—those who are preparing for college or advanced education in some form and those whose school days will end with graduation from the high school. For the prospective college students the problem is easy; colleges fix the requirements. Our task is marked out and all that remains for us is to do it. I believe that it is possible to complete the college entrance requirements without making any divergence from the regular course before the beginning of the second year and very little then. The course for all students for the first two years should be so arranged that the college entrance requirements may be completed in the third and fourth years. Commercial courses present more perplexing problems. They draw entirely from the boys who do not expect to go to college and presumably cannot afford a commercial training in a good business college after spending four years in the high school. The criticism was made by the business element of our city that our boys were not familiar with common business problems and business forms; that they could not write a business letter in a legible hand

in good English. There was unfortunately a great deal of truth in the criticism. In order that this condition might no longer exist a commercial course was established. The result of four months' experience shows clearly that the condition aimed at is not being reached. A very limited number—that is, those who elect the commercial course—are giving all of their time to commercial work to the exclusion of everything else, while the great majority of the boys never come under the instruction of the commercial men. It is not solving the problem for the solution of which it was established. The criticism which was made one year ago will still be true one year hence, or ten years hence, so far as the great majority of our boys are concerned. What is the trouble? In the eager desire to build up a business college within the high school and produce forced results and an elaborate showing a few are being overtrained and the remainder get nothing. Too much elective. The remedy is plain. Certain lines of business training as penmanship, arithmetic, elementary bookkeeping, and commercial correspondence are needful to all boys and not merely to those who elect a commercial course. Instead then of having all commercial subjects elective some of the more important branches should be placed in the regular course of the first two years and required of all students. Such studies as typewriting, shorthand, and commercial law could be elective in the last two years. The course of the school then might be likened to the trunk of a tree, solid with studies essentially the same including certain lines of commercial work for all students to the end of the second year, then branching into the elective courses. This would mean no electives until the end of the second year and after that electives by courses. As to electives within the courses, I do not believe that they are desirable.

Who shall do the electing? In Lancaster every boy who enters the school enters the general course, when the time for divergence comes he is not permitted to leave this course for any other without a written statement from his parents requesting or at least permitting him to take some other course. Our best boys as a rule are found in the technical or classical courses, they are there for work and usually give us little concern about their work. In a few cases parents consult with the teachers, but in most cases I believe that without much thought they endorse the boy's request. The result is that the election is largely done by the boys. Upon what basis do boys elect? With us most boys are seeking the line of least resistance. So the courses like the "one-hoss shay" must be built so that there is no weakest spot. The general course should require from three to five hours a week more recitation than the technical or classical and the commercial about five hours a week more than the general.

In summing up then I would say:

1. That every boy who can afford it should have at least four years of liberal education in the high school without special regard to its effect upon him as a money-making machine.

2. In view of the fact that some boys cannot afford, and many think that they cannot afford, to take a professional or technical or business training after they leave the high school, in schools specially designed for the purpose a concession must be made by allowing electives along those lines during the last two years of the course.

3. That election should be postponed until the end of the second year, that there should be no election within the courses, and all courses should require as nearly as possible the same amount of work.

"The Teaching of Latin in the High School" was the subject of the following paper prepared by Frank T. McClure, of Allegheny, and read by W. S. Gruver, of Bangor.

THE TEACHING OF LATIN IN THE HIGH SCHOOL.

It is not the purpose of the writer of this paper to defend the study of Latin in the secondary schools. Such a defense is unnecessary, even in an age characterized by its gross industrialism. For centuries the language of the ancient Romans has been taught in the schools and colleges of every land; in the past much more extensively and thoroughly, perhaps, than at present, yet with the same general purpose in view. That this will continue we have no doubt, inasmuch as the colleges and general culture demand that at least a modicum of Latin shall be mastered in the early stages of the educational process. Whether too much time is given to the study of this so-called "dead" language, made so more frequently by teachers than by the language itself, is not the question for discussion, "How it should be taught" rather than "Whether it should be taught," is the subject of our paper.

The choice of the teacher for beginners is of the utmost importance. As long as it is thought that any one who has had a few years' experience in schools or colleges, can safely steer young and immature

pupils through the rocks and depths of Latin intricacy, so long will those young people be seen "rarinantes in gurgite vasto." It is a lamentable fact that entirely too many beginners in the high school fail because they have not passed their Latin, which in itself is hard. With a teacher who has a good knowledge of the language based on years of experience, who is happy when imparting knowledge to his pupils, who is therefore enthusiastic in his work and can impart enthusiasm to those around him, who has a faculty for instilling culture into those who sit before him, many of those who are forced to stop high school because of failure in Latin would be permitted to continue to the end. Such a teacher would not endeavor to make his pupils think that the work is easy. We all can sympathize with what Heine is reported to have said, "The reason why the Romans conquered the world *was* because they did not have to learn Latin." The pupil at the very beginning should be brought to realize that he is approaching a subject that will impose unusual demands on his time and patience. And, at the same time, should be made to see that if successful he will have conquered and accomplished something that will always be an invaluable asset to him in his life-work. Just how this is to be effected depends greatly on the individual teacher and pupil. You will remember how Tom Sawyer had his fence white-washed that Saturday when he wanted to play. The teacher of beginners in Latin must be a Tom Sawyer of craft and ingenuity, who can interest his pupils so thoroughly that the workers will think they are playing.

Much might be said about the curriculum and text-books used in the first year. But as long as we teachers are happy over the fact that four years are given to high school work instead of two or three, and as long as school boards are dominated by trusts or buy books because they are cheap, we need not make any further demand for an extension of the high school course or cry for better and more expensive books. In passing, however, I will say that no good teacher relies wholly on the book that the pupil may be using. Supplementary work should, at all times, be given to suit the needs of the pupil or class. Just as Carlyle has admirably shown that the famous epigram of the French King "L'Etat! c'est moi" was most apropos, so the teacher of first-year Latin should consider himself the book, the very life of his class.

After the forms comes the acquisition of a good and extended vocabulary. This is a matter that is too often neglected, especially in the first year. But too much stress cannot be placed on the number of words familiar to the pupil. A very good plan is followed in the German schools which might possibly be adopted in ours. In the copy books Latin words are given with their German equivalents. In this way the boy or girl is acquainted with several hundred words even before he commences the study of Latin. Let the teacher impress upon the pupils at the very beginning the importance of having a knowledge of many words, and then let him see to it that this plan is diligently followed throughout the year, and he will work wonders with his classes.

It is to be feared that too much time and effort are given to syntax in the first year. Constructions must be learned, of course, but syntax should not come before forms and vocabulary. In the German schools, where six and seven years are devoted to Latin, only the simplest constructions are learned in the first two years. If the pupil does not understand fully, wishes and conditions and all the uses of the subjunctive, that is no reason why he may not in the second. Whenever possible it is an excellent plan to show the relationship between the two languages. Thought relationships never vary. The form may change, but the manner of thinking remains approximately the same. If the pupil understands conditional sentences in English, he will not have any trouble in learning the forms in Latin. For this reason, when conditional sentences are taken up, it is a wise plan to give at least one lesson to conditional sentences in English. In this lesson, or lessons, the teacher might explain the forms in Latin. To see the use of the subjunctive in the future less vivid conditions and in conditions contrary to fact, the pupil must have explained to him the real nature of the subjunctive. Most pupils can be made to understand the essential difference between the subjunctive and the indicative, and such points the teacher must take infinite pains to explain. In fact the more the teacher explains the difficulties to be found in the advance lesson the more rapid the advance of the class and the more eager the pupils. Boys and girls are not afraid of that which is hard if they can do it, but often they become discouraged with difficulties that rightly belong to the teacher to explain.

Too much time, I fear, has been devoted to the first-year work, but a word must be said about the matter of marking quantities. A certain amount of time is given by every pupil to the preparation of his lesson. If part of this must be spent on that which is not so important, things that are important must be neglected. For this reason the pupil should not be made to mark every long vowel. This practice is followed, it is suspected, because the text-book marks

the vowels. But the vowels are marked in the text for convenience. The vowels may be learned much more easily from the lips of the teacher in the classroom. Certain vowels should be known, however, particularly those of the ultimate and penultimate syllables.

The question of the relative importance of translation from Latin into English and English into Latin might be brought up here. We have only time to say that probably too much attention is given to English-Latin translation.

Now let us see what is the primary aim of Latin study and then let us keep in mind, even with the beginners, the aim in view, disregarding all else that does not minister to this object. This aim is to lead pupils to read Latin. Many other reasons have been given but the ability to translate into simple idiomatic English will include all other reasons advanced for the study of Latin. By the preceding statement I do not mean to say that the training in English is the summum bonum, but the language is to be taught because it is worth reading and worth knowing. Herein all other advantages shall be given to us. We shall get them all in no other way.

Having determined the aim we may now consider the means to the end. In the first year the greatest emphasis must be placed on forms. The declensions and conjugations must be known by the pupil as well as his A B C's. To the American boy or girl this highly inflected language seems strange and is considered at first with indifference or contempt, due I think to ignorance. For some reason the first form given in the vocabulary is supposed to be the right one and if the accusative is called for the nominative is used; if the meaning of the sentence demands the third person the first is naturally, almost instinctively, used. The successful teacher will the first day of school lead up to the first declension and possibly at the end of the week or at the beginning of the second he will assign a part of the first declension. By no means will he do as the writer did the first lession he ever assigned—give all the first declension in one lesson.

Forms must be learned and the use of those forms must be explained by the teacher. In short the teacher must condescend to come down to the level of the pupil and cannot expect the pupil to rise to his height.

In the second year the forms and constructions should be fully fixed, a working vocabulary should be acquired and the change from the indirect to direct discourse should be noticed. Nowhere can this be better studied than in Cæsar. In this year a thorough foundation should be laid so that Cicero and Virgil may be read as literary masterpieces.

In the connected discourse of the last three years the teacher should insist on having the different sections translated into clear, idiomatic English. No half translations should be accepted. The teacher himself should translate for the class long connected passages that may have been read or that may be unknown so that the pupil may realize how a translation may be made. Indulgence must be extended to a pupil in the matter of translation. His English vocabulary at best is not very large and his Latin one much poorer. Every assistance should be given him by the teacher who, as well as anyone else, knows the difficulty of rendering good translation.

Pupils are very prone to pay no attention to the connection between paragraphs, sometimes even not seeing the connection between sentences. That connection they should be made to explain at frequent intervals.

Inasmuch as Latin is a highly inflected languages the inflection of the word itself will generally show its relation in the sentence. Theoretically words may be placed in any order but practically the Romans gave the closest attention to the niceties of word order. To the cultured reader nothing can be finer than the varying shades of emphasis resting on certain words and phrases as the meaning of that sentence is unfolded step by step. For the pupil to come to appreciate Latin as a language and to love its literature he must learn its strange and difficult word order. Nor is this so hard as it is generally considered, if commenced at the right time. But the pupil who has always been taught to find first the subject and then the predicate with their various modifiers without regarding at all the logical word order, cannot be expected to take the interest in this subject that he exhibits who has been instructed to observe the word order from the very beginning. Professor Hale, of Chicago, is one of the most earnest advocates of this kind of teaching. As he has pointed out, this method of translating word by word gives the student practice in "anticipating parsing, which is really the only kind of parsing." According to this Latin scholar no word should be passed until all its possible constructions are hanging in suspense in the mind. When the last word is reached then and not until then, the meaning of the sentence is unfolded. To teachers even, who have never followed this method, many difficulties are presented. But when the difficulties have been mastered Latin can be read as a living language. Many teachers, however, do not care to go as far as Mr. Hale. Yet none

should disregard the order of the words entirely, satisfied with the form, losing the substance of the language. Any sentence in Cicero or Virgil will illustrate what I have been trying to explain. Let us take the first sentence in the Æneid commencing with Arma virumque cano. The first word indicates clearly the character of the poem. Wars are to be described; an epic poem is being written. The second word informs us that there is a single hero. The second line gives the destination, with Italy as the objective point. The hero suffered much on land and on sea. The gods are involved in the story because of the wrath of one of them. The purpose of the wandering is given at the last, that of founding a city. Just as this sentence gives one information as to the different subjects treated in the poem, so in every sentence written by a careful Roman writer the emphasis of the sentence is shown by the nice position of words. But this emphasis cannot be explained so well as it may be felt in the original. Close attention must be given then to the order of the words if the pupil is to get the meaning as it was given to the Romans. The more closely we approximate the way the Romans thought, the more interested we shall become in their language and literature.

In the third and fourth years Cicero's orations and Virgil's Æneid should be treated as literature rather than tasks assigned to be translated as the day's work. The first two years should have dealt with forms, syntax, and vocabulary in such a way that Cicero's orations may now be read with ease and interest so far as mere translation is concerned. Much more time may here be spent on that which many pupils, even teachers, think outside the province of a Latin class. In studying the life of Cicero we see that magnificent genius was connected with the events of this period more closely than any other man. To know the history of that wonderful period one must be familiar with Cicero's life. The pupil's Roman history must be reviewed. The leading characters whom Cicero mentions are to be identified. The person who reads Cicero without knowing who the Gracchi, the Scippios, Marius, Sulla, Pompey, and all the rest are, surely reads without understanding and appreciation. The effect of character on a person's work to be brought before the class. Quintilian's doctrine that a perfect orator should be the best possible man, of whom Cicero is the example, might be used as the text. Declamations of the finest parts of the orations should now be assigned with profit to each individual member of the class. When Virgil is reached it should be pointed out that the poet was a man different in many respects from Cicero, the orator. The one was a man of quiet, the other of activity, yet their aims and ideals were the same. The religious character of the epic should be shown, how Virgil was trying to inspire the Romans with a new love for their dying religious beliefs. Comparisons might be made with other great epics, particularly Homer's Odyssey. I am of the opinion, however, that too much is often attempted by Latin teachers in this direction.

Too often teachers talk over the heads of their pupils, giving them much that is not even essential. As to reading the verses, nothing can be said in this paper. There are many manuals, some of which every teacher of Virgil should possess. The teacher must be willing to assume, at first, most of the work. In time a great deal may be done, so far as the pupil is concerned. In most of our schools mythology is taught before Virgil is reached. This is an admirable scheme. The different myths should be learned. What the teacher should do, what the pupil, is a point of dispute. This work, however, should be done in one way or the other. Declamation may here be continued.

I wish that I had time to give a review of an article written by a Mr. Lodge in a recent number of the *Nation*. Suffice it to say that, in the article mentioned, it was shown that Virgil uses about 3,000 words. Cicero between 2,000 and 3,000, and Cæsar about 2,000. The three authors use somewhat over 4,000 words. Of these 4,000 words 2,000 are common words, and with these 2,000 words a person is able to read an unknown author, as for example Ovid, without the aid of a lexicon. It is also a noteworthy fact that 800 of these 2,000 words are verbs. In the article Mr. Lodge makes a most urgent appeal for such a working vocabulary. The foundation should be laid as has been suggested in the first-year work.

The person who sits behind the desk should be thoroughly acquainted with the author being read, he should have some knowledge of the literature of the same period, he should know history, both ancient and modern, he should have such command of his mother tongue that he could teach English as well as Latin. In short, though many people are of the opinion that a Latin teacher should be a narrow-minded person with spectacles, he above all others should be wide-awake, liberal, progressive, with the ability to inspire those before him with a love of the treasures of literature that can never die. Such persons are seldom found, but when discovered, they should be retained at whatever price.

Principal Robert O. Birch, of the Boys' High School, Reading, presented the following discussion of Mr. McClure's paper.

VIEWS OF PROF. BIRCH.

The subject of teaching Latin in the high school was further discussed in the following paper by Prof. Robert S. Birch, principal of the boys' high school of Reading, Pa.:

That there is great need of reform in the methods and scope of high school Latin is clear and unmistakable. The question that frequently has arisen in my mind is this, "If the study of Latin is considered an essential for admission to college, if its benefits are such as are claimed for it, why is not the high school course so arranged and so adapted to the ability of the average boy or girl that many besides those preparing for college will take the Latin course through the four years?" The answer I think is this: "High school Latin is too difficult for the average pupil, the sacrifices are too great, the benefit they feel is not commensurate with the time and energy expended."

In the Reading school, five years ago, we tried the experiment of making Latin a required subject in the first year. Results showed that it was an unwise move, that no more boys elected Latin in the second year than in the preceding classes. Surely there is more real value in first-year Latin than this would indicate. I do not believe that the proportion of young people who are mentally incapable of mastering a new language is as great as the failure of our experiment warranted us in concluding. The trouble, it seems to me, is not in the students themselves, not so much in the intricacies of the language, as in the methods employed in our endeavor to crowd two years of work into one.

Again, it seems to me that something ought to be done to counteract the utilitarian spirit that is invading our schools, and which, if left in command of the situation will soon drive out of our schools more and more of the cultural studies, and substitute "bread and butter" studies in their place. I doubt not that there are many here to-day who, like myself, lament the fact that Greek has been relegated to such an inferior place in the education of the American youth. Is the study of Latin also to decline in favor, and shall we "sell our birthright for a mess of pottage"?

No person can fail to see the trend of events. Is our education simply to prepare the boys and girls of our land to earn a livelihood, or is it to enable them to attune their hearts and voices to the highest and best in the universe? Let us not forget that "Life is more than meat, and the body than raiment." I plead for greater loyalty to the classical languages, for a clearer vision of

> "The glory that was Greece
> And the grandeur that was Rome."

The school is false to its ideals that abandons the time-honored course in Greek grammar, Anabasis and Homer. Though all things else should surrender to the mammon of commercialism, the high school should resolutely cling to this the greatest of its prerogatives, the most sacred of its traditions, to maintain the integrity of the classical languages in its curricula.

But it is not the opponents of such a course who are our most dangerous foes. I fear that there are forces even within our ranks that are making for the same end unwittingly or otherwise. The college requirements in English, in mathematics, history, science, and the modern languages are making our work in Latin and Greek more and more a hopeless task, are making thoroughness and exactness lost arts, and sound scholarship well-nigh an anomaly. Every meeting of teachers such as this records the lament of college professors that the boys they receive from the high schools are insufficiently prepared for college work, and likewise the wail of the high schools that the burden is too great. Which is to yield first—the college or the high school? As yet there are no signs of weakening on either side.

The trouble appears to me to arise from a confused idea of the mission of the high school. The college says so much work you must do, so much ground you must cover if your boys are to come to us; and the high school man protests that he should be allowed to cling to his own ideals of thoroughness and exactness in a few things. The college professor asserts that if their standard is to be maintained, it must be done; the schoolman wonderingly asks, "What is to be our standard?" It appears amazingly unpedagogical to me to pile the burden of extra work on boys who have not yet attained to their maturity.

Foreigners, especially Englishmen and Germans, criticize our system of public school education for want of thoroughness —also intelligent parents who watch their children's course in the schools. The slogan of the high schools should be, "Not much but well"—the college would make it "Much and well." The college authorities would exact intensive and extensive

study of Latin in the high school. It is evident to any one who is familiar with conditions as they exist that this is an impossible task. The failure of the high schools in this respect can be attributed largely to the endeavor to meet these requirements of the college. Let it be one or the other—intensive or extensive—and then let us work with this end clearly in view.

It does not seem to me that an extensive course in Latin would in its results satisfy our English and German critics, though it might be the means of giving our students a broader though superficial view of Latin or Greek literature; and it is evident to all that, with the crowded courses in our high school to-day, there are enough subjects that are covered in just this way.

I have not taught Latin for the past few years, but from what I have observed I am convinced that in each of the four years of high school course we are required to do more than we should. And what is the result? At the end of the first year half of the class drop Latin; at the end of the second year one-half again; and the few remaining ones struggle laboriously through the third and fourth years. And then, when they go to college, how many elect Latin? Or of those who do not go to college, how many can read Latin with any degree of ease, and derive any enjoyment from it? Very few, I venture to say. We are told very truly that it is unwise to compare our system of education with that of Germany. Yet there are certainly some features of the German system that we can appropriate with advantage to ourselves.

You all know that in Germany, at the end of the course in the Gymnasium the boys can readily translate from Latin into German, and back to Latin, and that Latin has as strong a hold on them as their history, science, or mathematics. But you know too, that in Germany they do not read Cæsar until the fourth year, and Cicero and Virgil until the sixth and seventh years.

It had been said that you would not take a native from the heart of China, who had never heard or read an English word, and after one year spent on the grammar of the English language, place in his hands a copy of Milton's Paradise Lost or Carlyle's French Revolution, and expect him to read it and appreciate it. And yet that is exactly what we are doing in Latin, in one year of grammar to young people to whom Latin is an unknown tongue. In the second, third, and fourth years, we hurry them through classical literature just as difficult as Milton or Carlyle. Are we doing that in our English work, in French, or in German? No! And that is why our boys "hate" Latin—we give them strong meat to digest, when they should have milk. Is it any wonder that they prefer the more palatable, pre-digested food found in a translation? They are suffering from mental dyspepsia and need lighter diet.

I believe that we should arrange our courses in view of what a boy can and will do; it is useless to talk of what he ought to do. Right here I think we find the fallacy in the college requirements. They have been made by men who were the easy learners, with boys like themselves in mind; they ignore the slow but studious boy, and nearly eighty per cent. of our high school students are such. Instead, I maintain that easy steps in Latin should characterize the work of the whole four years. I have such a course to propose, in which I wish to acknowledge the help and advice of Mr. Kerr of the Latin department of the Reading high school.

As to the first year, it is there that the greatest amount of harm is done. It may be that we lose sight of the end in view, namely, the reading of Cæsar. But how much preparation can be given to the students when in ten months or less we must complete the grammar? I admit that the work need not be so thorough, that much of it can be left until the second or third, or even the fourth year; but can you do this when you see ahead of you those four books of Cæsar, six of Virgil, six orations of Cicero, and some Sallust, Nepos and Ovid? Little time is left for the study of grammar after the first year, except as an occasional review. Would it not be better to devote one year to a simple beginner's book, and insist on an absolute mastery of its contents; and in the second year follow it with a rapid review of the first year's work with some simplified Cæsar, and additional grammar, with simple composition, this to cover one-half year; and then, in the second half of the year read the same book (mark you—one book, or two books at the most) in the original form?

Take your typical high school student at the end of his second year of Latin after having rushed through the grammar and three or four books of Cæsar—and do you think that he has as good a foundation for the remainder of his Latin work as one who has moved along by slow and easy stages, leaving nothing behind him that he has not mastered? Do you think the former knows more Latin, even if he

has read one, or two or even three books more of Cæsar?

After you have eliminated the undesirable element at the end of the first year, you have a picked lot who should be able to carry second year Latin with ease—but, as you know, this is not the case; you will all admit that our Latin students find this year the most difficult of all—fully one-half fail or discontinue Latin at the end of the second year. Is it that they too are incapable, that our teachers are incompetent, that our text-books are to blame for it? No! I think it is because we expect them to run before they have learned to walk, and the results of course are disastrous.

Do you not think then that to lighten the burden during that year would make the work of the third and fourth years better and far more satisfactory than it is in most of our schools at the present time? and make our classic students to get the benefit of other and broadening studies in the course? Cut down the requirements in Virgil and Cicero too, if necessary but make preparatory Latin first of all intensive and let the colleges require an examination of all entering students—and a rigid examination at that with a passing rank of eighty or eighty-five per cent. I would welcome such an innovation, and I believe that our schools could come up to the mark, provided the requirements are such that they can be covered thoroughly and well.

I hope to see the day when Latin will be taught in the two grades below the high school—but I fear that is an idle dream—until then I plead for a simplified course of Latin in the high school, especially in the first and second years, and then and only then will Latin occupy its rightful place, as one of the most important elements in the education of boy or girl.

The Nominating Committee of the Science and Mathematics Section, at this time named the following Executive Committee for the section, to serve during the ensuing year: F. E. Baker, Greensburg, chairman; L. J. Ulmer, Williamsport, secretary; Executive Committee, Professor Charles J. Ling, Allegheny College, Meadville; H. S. Hartlein, Bloomsburg, and A. B. Wallize, Milton.

The Nominating Committee of the High School Department made its report of officers named for the ensuing year as follows:

President—Cheesman A. Herrick, Philadelphia; Vice-president—W. L. Smith, Allegheny; Secretary—C. S. Davis, Steelton; Treasurer—Landis Tanger, Bedford; Executive Committee—J. P. Breidinger, Wilkesbarre; Miss Jane Mathews, Altoona; P. M. Bullard, Williamsport; and John W. Moyer, Philadelphia.

These were unanimously elected.

The Auditing Committee reported that they had audited all receipts and expenditures and found that the receipts had been $113, from that number of registrations, and the expenditures $80.62, leaving a balance in the hands of the treasurer of $32.38.

The report of the Committee on resolutions was then read as follows:

Your committee recommend the adoption of the following:

1. That the president and the executive committee deserve the hearty appreciation of the department for the energy put forth in arranging for this meeting, and for the wisdom shown in the selection of subjects for papers and discussions; and likewise the secretary whose untiring efforts to secure an increased attendance have contributed much to the success of the meeting.

2. That the members participating in the meeting by paper or discussion be commended for their willing response and prompt attendance—no one of the speakers having been absent unless absolutely unavoidable.

3. That we thank the school authorities of Harrisburg for the use of the high school building for a part of our sessions, and for the many courtesies extended.

4. That we appreciate the fact that the Department of Public Instruction has provided commodious and comfortable quarters for such meetings as this, and tender our thanks for their use.

5. That we thoroughly appreciate the efforts of the Committee on State Supervision of High Schools, and exult with its members in the success attained. Further, that we heartily endorse the action of State Supt. N. C. Schaeffer regarding High School Inspection, and pledge our unlimited support to the newly appointed inspectors.

6. That we approve of the fact that the attention of School Boards has been drawn to the wisdom of assisting in the payment of the expenses of teachers to the Department meeting. and extend the thanks of the Department to those Boards of the state that have already taken such action: Further, that this matter should be again called to the attention of Boards prior to our next meeting.

Signed: J. D. Stark, Chairman, J. M. Hostetter, G. W. Finch, J. D. Geist, and B. F. Heiges.

The following were registered as members of the Department.

Altoona—G. D. Robb, J. A. Stewart, Mary Turner, H. H. Baish, J. D. McFarland, L. D. Talbot, J. A. Hindman, H. B. Storer, M. E. Clarkson, M. E. Sleichter, M. E. Mulock, W. M. Bishop, A. C. Campbell, E. L. Foust, and Jane Mathews.

Harrisburg—N. C. Schaeffer, R. B. Teitrick, C. B. Fager, Jr., W. S. Steele, Mary C. Orth, B. G. Young, R. W. Pease, and G. N. C. Henschaw.

Jersey Shore—Elizabeth Curtis and Margaret Laird.
Lancaster—A. E. Kraybill and E. A. Nace.
McKeesport—J. H. Eisenhauer, J. F. Bower, and H. J. Stockton.
Millersburg—J. F. Adams and S. M. Neagley.
Millersville—George W. Hull and P. M. Harbold.
Milton—W. A. Wilson and A. B. Wallize.
Philadelphia—Cheesman A. Herrick, Wm. F. Gray, and John W. Moyer.
Philipsburg—C. D. Koch and K. H. Rymer.
Pittsburgh—H. B. Twitmyer, D. S. Swaney, and J. F. Travis.
Reading—Robert S. Birch, Martha A. Zeiders, and M. Fulton.
Renovo—J. M. Hostetter, Maude Stevens, and Mary E. Bower.
Sharon—J. D. Stark and W. L. Peake.
Steelton—C. S. Davis, L. B. Nye, and A. M. Lindsay.
Wilkes-Barre—J. P. Breidinger, Katherine Tookey, Marian Sturdevant, Elizabeth Verleuden, Clarence Couglin, J. P. Lord, E. L. Whatenecht, H. H. Zeiser, E. B. Guil, Heinrich Petersen, A. W. Moss, Margaret Weir, J. M. Welter, and Amos Chamberlain.
Williamsport—P. M. Bullard, A. M. Weaver, L. J. Ulmer, and Martha Thatcher.
Williamstown—D. F. Detter and F. D. Keboch.

Also, J. J. Kehler, Pottsville; G. D. Geist, Hazleton; T. T. Allen, Smethport; W. D. Graver, Easton; Carmon Ross, Doylestown; E. E. Sensenig, Emaus; W. S. Hertzog, California; H. D. Hopkins, Titusville; Anna Ankrom, Coraopolis; J. B. Geissinger, Bethlehem; M. L. Wilson, Mauch Chunk; A. D. Eisenhower, Norristown; T. A. Bock, Spring City; J. Linwood Eisenberg, Royersford; G. W. Finch, Uniontown; A. L. Eby, Newport; T. J. George, Carnegie; Landis Tanger, Bedford; G. B. Milnor, Muncy; G. G. Starr, Beaver Falls; T. Latimer Brooks, Carlisle; M. G. Reading, Honesdale; B. F. Heiges, Manheim; E. J. Henninger, Donaldson; Anna F. Lesher, Northumberland; C. J. Ling, Meadville; G. H. Goetz, Lititz; J. F. Kob, Elizabethtown; J. S. Hosterman, Montrose; Mary Y. Welsh, Columbia; L. E. Cross, Pleasantville; H. H. Spayd, Minersville; Thos. F. Hunt, State College; A. H. Welles, Scranton; W. H. S. Miller, Allentown; B. H. Houseworth, Benezette; George W. Brindle, Martinsburg, W. Va.; W. M. Peirce, Ridgway.

The officers under whose direction this very successful meeting was held were: President, J. P. Breidinger, Wilkes-Barre; vice-president, P. M. Bullard, Williamsport; secretary, J. F. Adams, Millersburg; treasurer, A. B. Wallize, Milton.

THE next meeting of the Department of Superintendence of the National Education Association will be held in Washington, D. C., February 25th, 26th and 27th. The New Willard hotel will be the headquarters and the prospect is good for a very large attendance.

THE NATURE OF PHYSIOLOGICAL PSYCHOLOGY: III.

DR. EDWARD BROOKS, PHILA.
Late Superintendent Public Schools, Philadelphia.

AS stated in a former article, there are three distinct systems of psychology, distinct in fundamental conceptions and in methods of treatment. The first is that which begins with the assumption of mind and by means of introspection, observation and inference endeavors to ascertain the facts and laws of mental action. The second is that which begins with the brain and the assumption that all psychical activity is the result of cerebral activity; and on account of its dealing with the functions of the brain has been called physiological psychology. The third system is that which begins with ideas, and endeavors to trace the different forms of mental activity and its products to the conflict and fusion of these ideas; the system taught by Herbart and his disciples and called the Herbartian system of psychology. In this article I propose to explain the principal assumptions of physiological psychology.

Physiological psychology begins with the study of the brain. It finds it composed of two hemispheres divided into two parts called respectively the cerebrum and the cerebellum. It finds the brain to consist of gray matter and of white matter, and holds that the gray matter is concerned in mental action and the white matter in the motion of the members of the body. The gray matter is found principally in the cerebrum in the form of cells and connective fibers, while the white matter is found in the cerebellum and consists mainly of nerve fibers. The cerebrum is thus the seat of mental action and the cerebellum of bodily motion.

Physiological psychology holds that the brain is the source of all mental activity and of all the various phases of our mental life. All psychical activity has its origin in and depends upon cerebral activity. External objects make an impression on the nerves of the different senses, which impressions are carried to the brain and are there transformed into conscious ideas. It holds, furthermore, that there are *no ideas which do not have their origin in the brain.* As Ziehen, an eminent German author puts it, "Physiological psychology, however, deals exclusively with those psychical phenomena to which concomitant physiological processes of the brain correspond. Hence its name. It ignores all psychical processes for which no corresponding phys-

iological processes in the brain are conceivable."

It assumes that not only mental action but consciousness has its origin in the action of the brain; and also that it depends upon the brain for its existence. It holds that consciousness is thus a phenomenon resulting from the action of nerve fibers and is merely the revelation of the results of nerve action. It is sometimes intimated that there is really no consciousness, but only conscious ideas, and that conscious ideas are all that is meant by consciousness. "Consciousness," says Ziehen, "is merely an abstraction. The association of ideas, with its accompanying sensations and images, is consciousness itself." Dr. William James, one of the most eminent American writers, speaks of "a stream of consciousness" in which he seems to mean only a succession of conscious ideas.

Physiological psychology denies or ignores the existence of the mind in its treatment of psychical facts and phenomena. Dr. James says: "The logical conclusion seems to be that the states of consciousness are all that psychology needs to do her work with. Metaphysics or theology may prove the soul to exist, but for psychology the hypothesis of such a substantial principle of unity is superfluous." Ziehen begins his treatise on psychology by saying: "We shall purposely avoid the terms *mind* and *matter*, since each introduces a new and at first purely hypothetical unit instead of the manifold data primarily furnished us." Yet, inconsistently or inadvertently, James and Ziehen both at times make use of the term "mind" as the basis of our mental life.

Physiological psychology assumes that all the ideas of which we are conscious are produced *alone by brain action*. External objects make an impression on the nervous system, these impressions are carried to the brain and there emerge as conscious ideas. Thus the color of a rose affects the nerves of the retina, sets them in motion, and these motions are carried to the occipital lobe of the brain, and by some mysterious process are converted into the idea *red*. Similarly its form, its fragrance, etc., affect the gray matter of the cerebrum and are transformed into ideas of shape and smell. But not only this, which most writers on standard psychology would not deny, physiological psychology holds that all other ideas, such as *truth, time, duty, space, honor*, etc., which have none of the attributes of external objects in form or color or sound, are produced in the same way by the action of nerve fibers. They deny that the mind, or consciousness, can produce any ideas or thoughts; all are products of the brain.

Physiological psychology assumes that all the thoughts and judgments of which we are conscious are the result of the association of the nerve fibers and cells of the brain. Ziehen speaks of the association of ideas, but by this term he means, not an act of consciousness or the mind, but of nerve tissue. Ideas, he says, are in the brain, and are associated there by the action of the brain cells and fibers. "New sensations," he asserts, "are received from the external world and the mental images of former sensations are already at hand in the cerebral cortex. These latent ideas are constantly called up in consciousness and associated with new sensations." He denies that there is any power in the individual to compare or associate ideas. "The processes of thinking," he asserts, "are strictly necessitated. The condition of the cerebral cortex in any one moment necessarily follows from its condition in the preceding moment." And again, "the association of ideas is inevitably necessitated from the beginning to the end. . . . We cannot think as we *will*, but we must *think* as just those associations which happen to be present prescribe. Our thoughts are never voluntary; like all events they are strictly necessitated."

Physiological psychology thus denies the doctrine of a will. Ziehen says: "Physiological psychology acknowledged no freedom of the will; our actions are as strictly necessitated as our thoughts." And again, "Physiological psychology teaches that our actions are strictly necessitated; they are the necessary product of our sensations and ideas." Munsterberg, one of the most eminent writers on psychology, says: "Consciousness has no causal activity," using consciousness as indicating the entire mental nature. Dr. James holds that ideas, as a result of cerebral action, follow one another, forming "a stream of consciousness"; but that consciousness has no control over this stream or the ideas which form it. In his view it is not I who thinks, or my mind that thinks, but "the thoughts themselves are the thinkers." He holds that we should not say, "I think," but "it thinks," as "it rains," thus denying the attribute of personality to consciousness, or the mind, as well as the power of will. He contends that the mind not only has no power to produce ideas and thoughts, but that it has no control over either them or our bodily movements; all our actions being caused alone and of necessity by our ideas and feelings. James, however, seems to flounder around so in his discussions that there is often an uncertainty as to his

views on some of these controverted points; but his doctrine is that the brain is the source of all ideas and actions rather than the mind.

Physiological psychology holds to the doctrine of the localization of brain action as related to mental action. Thus, particular points on each side of the fissure of Rolando are said to be related to different movements of the hands and arms. The optic or visual center is located in the occipital lobe of the brain; the auditory center is in the upper convolution of the temporal lobe; the center of taste and smell was thought to be in the gyrus hypocampus, but later writers are not certain. The center of speech is said to be situated in the island of Reil at the bottom of the fissure of silvius; the visual word center in the *angular gyrus* of the left hemisphere.

While this doctrine of localization is held by writers on the functions of the brain, there is some doubt and difference of opinion among them. Flourens holds that the entire cortex is always engaged in any kind of mental work; and Ferrier states that extirpation of the occipital lobes does not appreciably impair vision; and also that when it does at first affect it, the vision may be restored. Both Goltz and Munk unite with Flourens in the belief that "the actions from which we conclude intelligence, feeling, passion and natural impulse, cannot depend on definite section of the cerebrum." James asserts that "There is no 'organ' of speech in the brain. The entire mind and the entire brain are more or less at work in a man who uses language."

This doctrine of brain action as related to mental action is a comparatively new one and has been developed within the last half century. In ancient times the seat of the mind was held to be in the blood, in the heart, or in the diaphragm. Among the ancient Greeks, only Alcmæon and Plato taught that we think by means of the head. Herophilis (300 B. C.) was the first to transfer the mind to the brain. Among the first to localize the functions of the brain was Gall, the author of the system of phrenology. The theory of localization was discredited by Flourens who concluded from experiments that any part of the cerebral hemispheres may be injured or removed without detriment to mental action. The theory of localization was revived again in 1861 by Broca's discovery that the central organ of speech is located in the third frontal convolution of the left hemisphere called the island of Reil. A new impetus was given to the doctrine of localization by the experiments of Fritsch and Hertzig in 1870, and the still later investigations of Munk and Ferrier. The more recent investigations seem not to have been very prolific in new discoveries in respect to the functions of the brain.

The above are the principal general assumptions of the writers on physiological psychology. A careful reading of their works, which are usually severely critical of the "old psychology," will show that they find it difficult to consistently adhere to their own doctrines. Thus, James, who denies an ego, or the mind, frequently uses such expressions as "I think," "I know," "we feel," "we know," "we expect," "we wish," "keep the mind upon," "what is in my mind," etc. This is true of all the writers on psychology, who attempt to discuss mental phenomena on the basis of a denial of the existence of the mind. They unconsciously fall into that method of thinking that is common to the race, namely that we have a mind and that this mind is the origin of and has control over our thoughts and actions. They tacitly admit in practice what they deny in theory, that we (the mind) have the power to perceive, to reflect, to imagine, to walk or run or ride, etc., in accordance with the power of will, rather than that these actions are forced upon us by the action of the brain. Thus James uses the expressions, "The mind selects again," "The mind chooses to suit itself," "Our state of mind is never precisely the same," etc. And even Ziehen, who watches himself with great care to avoid the term mind, speaks of "ideas in the mind," "combinations of ideas also take place within the mind itself."

The relation of physiological psychology to standard psychology which he calls simply psychology, is so well expressed by Munsterberg that I shall quote a few of his statements. "Psychology knows endlessly more about these details than physiology, and in the development of the special psycho-physiological theories psychology has always led and taught physiology how to interpret the chaos of brain facts. Brain physiology without psychology would have been perfectly blind, while psychology without detailed brain physiology would have stood exactly where it stands to-day. . . . The special physiology of the brain, which in any case is still an almost unknown field, does not therefore help the psychologist anywhere."

In speaking of the value of physiological psychology to teachers he says: "There never was a teacher who would have taught otherwise, or would have changed his educational efforts, if the physiological substratum of mental life had been the liver or the kidneys instead of the brain. We have seen here that psychology has nothing

to learn from physiology and that it is a caricature of facts if you tell the teacher that he can learn anything new about the mental life if he knows by heart the accompanying brain processes. . . . All talk about the brain is, from the standpoint of the teacher, merely cant."

These then are the principal assumptions of physiological psychology: That man has no mind that thinks, feels and wills; but that these actions are performed by the brain; that all psychical activity is due to cerebral activity; that consciousness has its origin in the action of the brain, or maybe, according to Ziehen, only a "mere abstraction"; that consciousness has no causal activity but merely reveals the results of a causal activity of the brain; that all ideas and thoughts and actions are produced by the action of the brain; that the mind has no power to compare ideas and reach conclusions, but that these conclusions are caused by cerebral actions and revealed by consciousness; that man has no power of will to think or choose or act, but that all his ideas, thoughts and actions are "strictly necessitated" by the action of the brain; in fine, that man has no spiritual nature, but is wholly and absolutely material, consciousness being merely a phenomenon of material forces operating among, or by means of, the cells and fibers of the human brain.

I have not the space, nor is it my purpose to criticise the assumption of physiological psychology, except to say that it discrowns man of his personality and affords no basis for a belief in a life hereafter. The simpler and more satisfactory system of psychological doctrine is that which teaches that man has a mind by which he can think and feel and will; that he has not only ideas of objects and their qualities derived through the senses, but also ideas higher than those of form and color, ideas formed by the mind's own originative power; that the mind can compare its various ideas and form judgments and opinions; that man has the power of reasoning by which he builds up the great systems of philosophy and science; that he has ideas of the right and of obligation and the power of will to direct his actions in accordance with these ideas and thus become a rational and moral being; and that with the ideas of the Good and the Infinite in his mind, and the aspiration after a life beyond the grave, he can lay the foundations of that grand temple of religious thought whose triune columns are God, Immortality and Heaven.

EDITORIAL DEPARTMENT.

THE SCHOOL JOURNAL.

LANCASTER, FEBRUARY, 1908.

N. C. SCHAEFFER, - - - - J. P. McCASKEY.

THE Executive Committee of the Pennsylvania State Educational Association has decided to hold the next meeting of the Association on Tuesday, Wednesday and Thursday, July 7th, 8th and 9th. The place is State College, where the teachers and friends of education who are in the habit of attending these meetings, will have opportunity to see the thirty or more buildings that make up the grand educational plant of the Pennsylvania State College. The question of teaching Agriculture in the public schools is growing in interest and urgency. The state of Pennsylvania has spent a large sum of money in equipping the Agricultural departments of the college. It will, therefore, be of prime importance for Superintendents and others interested in the solution of the rural school problem to attend the next meeting of the Association, where they can see the latest appliances for instruction in Agriculture. The teaching of Agriculture in township high schools is one of the topics on the programme. Many of our readers who have often heard of this great college at the geographical centre of the state, have little idea of its size and importance. Come and see it.

THE meeting of the National Educational Association will be held at Cleveland from June 30th to July 3d. Supt. E. G. Cooley, the president, is arranging an attractive programme and the local committee is busy at work in making satisfactory arrangements for railroad rates and for the various sessions of the Association. Cleveland, is within easy reach of Pennsylvania teachers and they should be there in force.

THE awful disaster at Boyertown, Berks county, in which one hundred and seventy or more men, women and children were burned to death, has spread a feeling of gloom and horror wherever it has been told. The terror spread more quickly than the flames. The means of exit were inadequate. In an incredibly brief time all went down in a horror, ruin and death.

A THOUGHTFUL writer says: "It seems hard to be generous, not easy even to be

just, to the times upon which our lot is cast. Yet much that we now look upon as prosaic and perhaps decry as unreal, if read as history, would enchain our imaginations; if spoken as prophecy, would stir our very souls."

PROFANE swearing is under the ban in Pottsville as it should be everywhere else. The Union Traction Company there has determined to enforce the law prohibiting it. A few days since two men were fined $12 each by Justice McCool for profanity while riding on the trolley cars. Several others have been fined as much as $20 each. The company is taking this action to protect its women passengers.

IT is announced that the amount of concrete to be used in building locks for the Panama Canal would suffice to construct 22,842 eight-room city houses of the generous size of thirty by thirty feet, with two stories and basement, and with concrete floors and roof. Allowing each of these houses a seventy-five-foot lot, they would make a continuous street from New York to Philadelphia, with enough houses left over to make a row on one side of the street from Philadelphia to Washington. The houses would furnish homes for 120,000 persons. These figures are large, but the Canal is a work of colossal proportions in every way.

SOMEBODY tricked the Associated Press, and played a fraud upon the public in the Sing Sing paragraph in our last issue, which told of college men in prison. The editor of the West Virginia *School Journal*, Mr. Waitman Barre, wrote the warden of the prison, and learned that it is merely another lie. Glad to know it, and thanks to Mr. Barre.

THE American Museum of Natural History, at New York, has just received from Egypt twenty-seven cases of rare fossils, about 600 specimens in all, comprising forms new to science, exceedingly valuable fossils of the ancestral elephant and of an extraordinary beast, which is not closely related to any living form or any extinct group. It is conservatively estimated by geologists that these animals existed more than a million years ago. These fossils are the product of an expedition financed by Morris K. Jesup, President of the museum, and sent to Northern Egypt.

PROF. CHARLES ELIOT NORTON recently celebrated his 80th birthday anniversary at his home, in Cambridge. He was in excellent health and received numerous callers during the day. Among the many congratulatory messages which came to him was one in book form, signed by numerous undergraduates and graduates of Harvard University. The chief foreign tribute was an illuminated address from the Ruskin Society, of Glasgow, which said in part:

"On this occasion we recall with pleasure the long period of friendship you were privileged to enjoy with John Ruskin, whom we still delight to call Master, and especially would we remember with gratitude the debt we all owe your 'Letters of Ruskin.' During your long life you have been able to accomplish in the domain of literature many remarkable works. At this time we should especially remember your work as the first commentator in English on the 'Vita Nuova.' As a Dante scholar, your place is an honorable one; your niche in the Palace of Art is surely fixed and recognized. Your great contemporaries in American literature have enshrined their names in works which the world will not willingly let die, and it gives us pleasure to recall that you were one of the honored friends of that noble band. Your memorial volume, issued on the one hundredth anniversary of Longfellow's birthday, gives striking proof that your hand has not lost its cunning in the art of literature. Lovers of Longfellow, and their name is legion in all parts of the world—must be your debtors for recording your recollections of him."

A WRITER in the *Atlantic* says: "The woodchuck's is a curious shift, a case of nature outdoing herself. Winter spreads far and fast, and woodchuck, the 'ground hog,' in order to keep ahead out of danger, would need wings. But he wasn't given any. Must he perish then? Winter spreads far, but does not go deep—down only about four feet; and woodchuck, if he cannot escape overland, can, perhaps, *under* land. So down he goes *through* the winter, down into a mild and even temperature, five long feet away—but as far away from the snow and cold as bobolink among the reeds of the distant Orinoco. Indeed, woodchuck's is a farther journey and even more wonderful than bobolink's, for these five feet carry him beyond the bounds of time and space into the mysterious realm of sleep, of suspended life, to the very gates of death. That he will return with bobolink, that he will come up alive with the spring out of this dark way, is very strange."

ALBERT R. LEDOUX thus writes to *The Outlook:* "I left the line of the Great

Northern to report on the mineral resources of the Kootenay Lake district. There came to our camp one night a guide, or trapper, who accepted our invitation to supper before resuming his canoe trip. He had just come down from the Selkirks, where he had acted as guide for a man named Theodore Roosevelt, who wanted to shoot a cinnamon grizzly. He said, 'That man Roosevelt is the bravest man I ever saw. He is awful near-sighted, and has his pockets full of different kinds of eye-glasses and spectacles; he has one set for reading, one for ordinary outdoor work, and one for shooting. We were going up a narrow trail—I was ahead—when I saw a big grizzly trotting down, not over a hundred yards away. I jumped back and told Mr. Roosevelt. Most any other man would first have thought of his gun, but Roosevelt stopped, felt around until he found the glasses that he wanted, took off the pair he had on, wiped the other pair and adjusted them on his nose, and then, with the grizzly coming along at a good clip, and only a few yards away on this narrow trail, he took time to get a good aim, and shot him dead. A man that takes time to change his eyeglasses when a grizzly is charging him is mighty brave.'" This incident throws light on something more than the wonderful physical courage of the President.

THE ANNUAL MEETINGS.

THE proceedings of the High School department of the State Educational Association, which met at Harrisburg during the Christmas holidays, with papers read during the sessions, will be found in this issue of *The Journal*. We are indebted to the Secretary, Prof. J. F. Adams, principal of the High School of Millersburg, for this report. It will repay careful reading by all persons who are interested in the High School movement and in High School work.

The annual meetings of the Superintendents' and Directors' departments of the State Association will be held during the month of February, the County Superintendents and the School Directors at Harisburg, the former on the 11th and 12th and the latter on the 13th and 14th. The meeting of the City and Borough Superintendents will be held in Philadelphia at Houston Hall, University of Pennsylvania, February 20th, 21st and 22d. Supt. J. C. Taylor, of Scranton is president of the department of County Superintendents; F. R. Stotler, M.D., of Wilkinsburg, Allegheny county, of the School Directors' department; and Supt. E. E. Miller, of Bradford, Pa., of the department of City and Borough Superintendents. The programmes of these important meetings are here given. That of the County Superintendents, fifth annual meeting, which will be held in the auditorium of the Harrisburg High School, is as follows:

COUNTY SUPERINTENDENTS.

Tuesday, February 11th.

2:00—Devotional Exercises—By Rev. S. W. Herman, Harrisburg.

2:00—President's Address: "The Profession of Teaching"—By Supt. J. C. Taylor, Lackawanna County.

2:30—The County School and Its Betterment: (a) "The Certification of Teachers," by Supt. Milton J. Brecht, Lancaster, discussion led by Supt. J. W. Sweeney; (b) "Closer Rural School Supervision," by Supt. James J. Bevan, Mauch Chunk, discussion led by Supt. J. M. Shelley.

7:30—Music—By Harrisburg High School.

7:45—Address—"Some Desirable Features of a New School Code"—By Supt. Samuel Hamilton, Braddock.

8:15—Address—"An Educational Policy"—By Dr. Thomas H. Hunt, Pennsylvania State College, Dean and Director Agricultural and Experiment Station.

Wednesday, February 12th.

9:00—Devotional Exercises, with Harrisburg High School.

9:15—"A State Course of Study"—By Supt. Frank R. Hall, Washington. Discussion led by Supt. George A. Grim.

10:00—"Is the Present Course of Study for Township and Borough High Schools Satisfactory?"—By Supt. W. W. Evans, Bloomsburg. Discussion led by Supt. J. Kelso Green.

11:00—"New Legislation in Regard to the Consolidation of Schools"—By Supt. H. S. Putnam, Towanda. Discussion led by Supt. T. S. Davis.

1:30—Reports of Committees, etc.

2:00—"The Size of the School Board: Five or Seven Directors instead of Six?"—By Supt. Geo. W. Moore, Ercildoun, Chester County. Discussion led by Supt. Livingston Seltzer, Pottsville.

3:00—"Should there be any Borough or Township Lines Marking a School Division?"—By Supt. J. E. R. Kilgore, Sullivan county.

4:00—"The Introduction of the Manual Arts"—By Supt. Mattie M. Collins, Emporium.

Introduction of President Elect. Adjournment.

The papers are limited to fifteen minutes, and discussions to ten minutes for each person. At least half an hour will be allowed for general discussion of each paper read.

The officers of the department are Supt.

J. C. Taylor, Scranton, Lackawanna county. president; J. P. McCaskey, Lancaster, secretary; and Supt. J. H. Landis, Norristown, Montgomery county, treasurer.

The executive committee are County Supts. E. M. Rapp, Hamburg, Berks county, G. B. Milnor, Muncy, Lycoming county and J. G. Dell, Huntingdon, Huntingdon county.

A general invitation is extended by each of these departments to all persons interested in their special lines of work. The programme of the County Superintendents, inviting the School Directors, says: "To be in time for the morning session of the Directors' meeting on Thursday you must come to Harrisburg on Wednesday. Why not come a day earlier and attend the meeting of County Superintendents. The papers and discussions may be interesting to you from the fact that educational problems will be seen from a different point of view—that of the Superintendents."

The following is the programme in brief, of the thirteenth annual session of the

SCHOOL DIRECTORS CONVENTION.

Thursday, February 13th.

10:00—Registry of Delegates—By Wm. M. Bowen, Corresponding Secretary, and James Howarth, Treasurer.

11:00—Devotional Exercises—Conducted by the Right Reverend James Henry Darlington, Bishop of the Protestant Episcopal Church, Harrisburg.

11:10—Address of Welcome—By Hon. E. Z. Gross, Mayor of the City of Harrisburg. Response by H. W. Schick, Chairman of the Executive Committee, Reading, Pa.

1:30—Address—By the President of the Association, F. R. Stotler, M.D., Wilkinsburg.

1:50—Address—By His Excellency, Governor Edwin S. Stuart.

2:20—Address—By Dr. Nathan C. Schaeffer, Superintendent of Public Instruction. Discussion.

3:00—"Qualification of Teachers"—By Mr. C. C. Hill, Erie. Discussion.

3:40—Report of Legislative Committee. Discussion and action upon same.

4:15—Discussion of Pertinent Miscellaneous Topics, and Answers to Queries.

4:30—Appointment of Committees and Delegates: (a) Nominations; (b) Resolutions; (c) Delegates to the National Educational Association; (d) Miscellaneous Business. Adjournment.

7:30—Music—By the Orchestra of the Harrisburg High School. Readings, by Miss Bertha Herring, Teacher of Elocution, Harrisburg High School.

8:00—Address—"The Director a Factor in Education"—By Deputy Supt. R. B. Teitrick.

Friday, February 14th.

9:15—"How Can School Directors Improve the Teaching Profession?"—By Dr. I. W. Marsteller, White Haven, Pa.

10:00—"Present Requirements of a Public School Education"—Mr. Joseph T. Evans, Bradford, Pa.

10:40—Reports of Committees, Miscellaneous Business. Adjournment.

The officers of the Directors' State Association are, Dr. F. R. Stotler, Wilkinsburg, president; Messrs. John S. Frederick, East Coventry, Benton T. Jayne, Scranton, and Benjamin J. Sykes, Clearfield, vice-presidents; D. F. Bast, Allentown, recording secretary; Wm. M. Bowen, Chester, corresponding secretary; and James W. Howarth, Glen Riddle, treasurer. The members of the Executive Committee are Messrs. H. W. Schick, Reading, J. A. Steese, Mt. Holly Springs, James Brown, Bloomsburg, C. I. Lane, Bradford, and C. C. Hill, Erie.

The eighteenth annual meeting of the City and Borough Superintendents' department, which will be held in Philadelphia, presents the following as the programme of the sessions:

CITY AND BOROUGH SUPERINTENDENTS.

Thursday, February 20th.

10:00—Music and Invocation.

10:30—Presidents Address—"The Professional Care of the Child"—By Supt. E. E. Miller, Bradford.

11:00—Report of Committee on Revision of the School Laws of Pennsylvania.

Discussion—By Supt. Chas. Lose, Williamsport, Supt. J. M. Norris, Homestead, and Dr. A. D. Yocum, University of Pennsylvania.

2:00—Topic—Problems of Secondary Education in Pennsylvania:

(a) "District High Schools," by Principal Robert S. MacNamee, Strafford.

(b) "Jurisdiction of the School over School Athletics, Pupil Organizations, and Kindred Activities," by Supt. Thomas March, Greensburg.

(c) "State Inspection of High Schools," by Dr. Cheesman A. Herrick, Philadelphia.

(d) General Discussion opened by Supt. F. E. Downes, Harrisburg.

No programme has been arranged for Thursday evening, this being left open for members to use according to inclination.

Friday, February 21st.

10:00—Music and Invocation.

10:15—Topic: Problems of Elementary Education in Pennsylvania:

(a) "Retardation in the Grades," by Dist. Supt. O. P. Cornman, Philadelphia.

(b) "Special Classes for the Unusual Child," by Supt. H. H. Spayd, Minersville.

(c) "Appointment and Tenure of Teachers," by Supt. S. H. Hadley, Sharon.

(d) General Discussion, opened by Supt. W. W. Rupert, Pottstown.

2:00—Topic: Moral and Physical Care of the Child:

(a) "Function of the Public School in the Moral Education of the Child," by Supt. D. A. Harman, Hazelton.

(b) "Function of the Public School in the Physical Care of the Child," by Principal H. E. Winner, Pittsburg.

(c) General Discussion, opened by Supt. S. A. Thurlow, Pottsville.

4:00—Reception to Members by Provost C. C. Harrison in the University Museum.

8:00—Topic: The State Educational Commission. Views of Dr. Nathan C. Schaeffer, State Superintendent, Supt. James M. Coughlin, Wilkesbarre, and Supt. H. C. Missimer, Erie.

Music by the Glee Club of the University of Pennsylvania.

Saturday, February 23d.

10:00—Music and Invocation.

10:15—"Retirement Fund for Teachers"—By Mrs. C. C. Tindal, Philadelphia, and Supt. Addison L. Jones, West Chester.

General Discussion opened by Hon. O. T. Corson, Ohio.

11:00—"The Foreign Child in the Public Schools"—By Dist. Supt. Chas. A. Brelsford, Philadelphia, and Supt. Joseph Howerth, Shamokin. General Discussion.

11:30—Reports of Committees and transaction of business. Adjournment.

The officers of the association are Supts. E. E. Miller, Bradford, president; Joseph Howarth, Shamokin, vice-president; Edward McGuire, Beaver Falls, secretary; and S. H. Dean, Mount Carmel, treasurer. The Executive Committee are, Supts. Martin G. Brumbaugh, Philadelphia, J. L. Allison, Wilkinsburg, and Robert E. Laremy, Phœnixville.

The headquarters will be at the Colonnade Hotel, corner of 15th and Chestnut Streets at which special rates on the European plan have been secured as follows: For two persons in one room, $1.00 and upwards; one person in a room, $1.50 and upwards. Members can take the cars at 15th and Walnut for the University, and leaving the University can take a Chestnut Street car for the hotel.

PARCELS POST.

THE country needs the parcels post. But, of course, the express companies will do what they can to prevent any such legislation at Washington. "If the parcels posts were established on the 38,000 rural routes throughout the country for the delivery of parcels originating on these routes, and for delivery within their territory, and if each rural free delivery carrier carried but three packages of eleven pounds each on every trip, the entire postal deficit which, in 1907, was $6,653,282, would be wiped out." Postmaster General Meyer thus succinctly sums up what he hopes to accomplish, if the parcels post scheme goes into effect. Already a bill has been introduced in Congress by Representative Lafean, of Pennsylvania, providing for special application of the idea in York and Adams counties.

In an interview, the postmaster general said: "The rural parcels post will benefit the farmer enormously. It will not only lead to an increased consumption, but a consequent larger trade. It means a great saving to the farmer and gives the country store-keeper an immense advantage over the mail order house, and it is of incalculable importance that the country merchant should exist and prosper. Not only will the rural parcels mean these, but the system can be put into operation without the expenditure of one single cent on the part of the government. There are already some 38,000 rural routes in operation in the United States, reaching probably 8,000,000 or 10,000,000 people. Now, suppose we establish a special rate of 5 cents for the first pound and 2 cents for each additional pound up to eleven pounds for the delivery of packages on these rural routes, which originate along the line of the route or at the distributing postoffice for the delivery to carriers. This rate means that eleven pounds may be sent for 25 cents—or practically 2 cents a pound—to parties along a rural route from other parties within the territory of the same route. The mail order houses and the express companies have vigorously fought even the slightest suggestion of a parcels post. To all intents and purposes, they have kept still, but they have prejudiced the country store-keeper through false reports of the intent of the system. The country merchant has conceived from them the idea that its operation means the ruin of his business. All of which is a direct inversion. If the parcels post were established on rural routes, the local country merchant would be able to supply customers at an average cost of mailing of 2 cents a pound, or 25 cents for eleven pounds, while the wholesale merchant or mail order houses in order to reach the same consumers by mail would be compelled to pay $1.02 for eleven pounds. The enormous advantage which this rate gives to the country store-keeper will be evident at a glance. The advantage to the consumer is immediately apparent. Not only will both the dealer and consumer benefit, but still another class of rural citizens will enjoy increased advantages. This is the small country post-master, of the fourth

class, whose salary would be immediately increased automatically by the large number of packages passing through his hands."

Notwithstanding the postmaster general's activity and arguments about the parcels post, it is doubtful whether Congress will authorize the system at this session. There is a persistent rumor in Washington that Speaker Cannon is opposed to it, and that he has placed on the post roads committee members who share his views.

LIBRARIES TO SCHOOLS.

THE townships of East Huntingdon, Mt. Pleasant and Allegheny, Westmoreland county, are to have important additions to their high schools in the shape of large and well-selected libraries. These townships have maintained high schools for several years and are now to be placed in a position where their efficiency will be greatly increased through the generosity of A. L. Keister, of Scottdale, who has always taken deep interest in the public schools and has been connected with the Scottdale School Board for over twenty years. He not only gave a large part of his time to building up the local schools, but has spent his money liberally in building up for the Scottdale high school what is pronounced by competent critics one of the best, if not the best of working libraries in any public school in the western part of the state. A few months ago Mr. Keister decided to extend his generosity to places outside of Scottdale, and instead of giving a library to some town, he thought it better to place good libraries in the country districts, his idea being that the boys and girls in the rural districts have a right to an equal share with the boys and girls of the towns, the best things in a literary way.

The matter was mentioned to County Superintendent R. C. Shaw who became enthusiastic at once. Mr. Keister then commissioned him to select a library for each of the three schools, limiting the price of each library to $1,000. Mr. Shaw secured lists of books as recommended by prominent educators and from these the books were selected. In this work he was ably assisted by Professor Edgar Reed, of the Scottdale schools.

There will be about 1,000 volumes for each school. These will include works of standard poetry and fiction, biography of all prominent men, many volumes of the best history, works of reference and about 200 volumes devoted to farm life. These include recognized works on the various branches of domestic science, rearing of all kinds of farm animals and poultry, chemistry of the soil, fertilizers, planting and caring for fruit and all kinds of farm crops, in fact, every branch of farm work. The selection thus makes the library of greater value to a farming community by giving the very thing the people are interested in.

The books have been ordered and will be placed in the schools in a short time. While the library is primarily for the use of the pupils it will have a broader usefulness from the fact that all patrons of the schools will have permission to use the books. The library is for the people of the town, both old and young. The recent awakened interest in the science of farming will make the books of that class of great value to the communities receiving the same. Supt. Shaw will assist the teachers in charge to map out a plan for using the libraries. The directors of the townships receiving the books are delighted with the gift and will properly care for the books. This is a departure from the usual manner of giving libraries and one that is to be highly commended.

SANTA CLAUS FOREVER.

IN a recent letter from Professor George F. Mull, of Franklin and Marshall College, he says: "Mr. Mackey's beautiful tribute to the power and reality of Santa Claus, copied into THE SCHOOL JOURNAL, has reminded me of the enclosed exquisite discussion of the same subject. I cut it out of the *Philadelphia Press* during the holidays, and send you a copy of it, knowing that you will love it and prize it as a noble setting for a mighty truth. The iconoclasts are loud and noisy in their work, but the truth remains in the silent spaces of the spirit's realm, to be known and heard and loved and honored by all such as are trying to 'walk in the spirit'; yea, and it is ever 'the still small voice' or 'the little child' that give to truth its finest utterance."

YES, THERE IS A SANTA CLAUS.

Some years ago the *New York Sun* printed the following in a conspicuous place among its editorials:

We take pleasure in answering at once and thus prominently the communication below, expressing at the same time our gratification that its faithful author is numbered among the friends of the *Sun:*

Dear Editor: I am eight years old. Some of my little friends say that there is no Santa

Claus. Papa says if you see it in the "Sun" it's so. Please tell me the truth. Is there a Santa Claus?

VIRGINIA O'HANLON,
115 W. 95th St.

Virginia, your little friends are wrong. They have been affected by the skepticism of a skeptical age. They do not believe except they see. They think that nothing can be which is not comprehensible by their little minds. All minds, Virginia, whether they be men's or children's, are little. In this great universe of ours man is a mere insect, an ant, in his intellect, as compared with the boundless world about him, as measured by the intelligence capable of grasping the whole of truth and knowledge.

Yes, Virginia, there is a Santa Claus. He exists as certainly as love and generosity and devotion exist, and you know that they abound and give to your life its highest beauty and joy. Alas, how dreary would be the world if there were no Santa Claus! It would be as dreary as if there were no Virginias. There would be no childlike faith then; no poetry; no romance to make tolerable this existence. We should have no enjoyment, except in sense and sight. The eternal light with which childhood fills the world would be extinguished.

Not believe in Santa Claus! You might as well not believe in fairies. You might get your papa to hire men to watch in all the chimneys on Christmas Eve to catch Santa Claus; but even if they did not see Santa Claus coming down, what would that prove? Nobody sees Santa Clause, but that is no sign that there is no Santa Claus. The most real things in the world are those that neither children nor men can see. Did you ever see fairies dancing on the lawn? Of course not. But that's no proof that they are not there. Nobody can conceive or imagine all the wonders there are until seen and until seeable in the world.

You may tear apart the baby's rattle and see what makes the noise inside, but there is a veil covering the unseen world which not the strongest man, nor even the united strength of all the strongest men that ever lived, could tear apart. Only faith, fancy, poetry, love, romance, can push aside that curtain and view and picture the supernal beauty and glory beyond. Is it all real? Ah, Virginia, in all this world there is nothing else real and abiding.

No Santa Claus? Thank God he lives, and he lives for ever. A thousand years from now, Virginia, nay, ten times ten thousand years from now, he will continue to make glad the heart of childhood.

ITEMS FROM REPORTS.

BERKS.—Supt. Rapp: Local institutes were held at Geigertown and Mohnton. The evening lecturers were Prof. James Grim and Hon. Henry Houck. The attendance has suffered through much sickness.

CHESTER.—Supt. Cole: A bill in equity has been filed in this county to compel us to admit a tuberculous pupil who was excluded last September by order of the proper committee of the board. Our defence being tuberculosis, we expect a demurrer to this as inadequate in law. Argument should be had on this question about the middle of February.

CLEARFIELD.—Supt. Tobias: Our annual institute was well attended. There were 473 teachers enrolled, 98 per cent. of the whole number. Doctors Schaeffer, Van Ormer, Ellis, and Bible were our day instructors, a very able and efficient group of workers. The general verdict on the part of teachers and patrons is that this was one of the most successful and beneficial institutes in our history.

CLINTON.—Supt. McCloskey: The fifty-second annual session of Clinton county teachers' institute was held December 16th to 20th at Lock Haven. For the first time in the history of the county every teacher was registered. The sessions were well attended and the interest was kept at high tension during the week.

CUMBERLAND.—Supt. Green: The county institute was held the first week in December. The instructors and evening attractions were, Drs. Ira W. Howerth, Edson M. Mills, Chas. H. Albert, Geo. E. Reed, S. A. Martin, and Prof. J. A. Sprenkel; Judge Alfred Ellison and Dr. Roland D. Grant, the Scotch Singers, and the New York Grand Concert Company. Instruction was given in psychology, methods, arithmetic and geography. This made a well balanced programme, which was heartily appreciated by our teachers. The instructors did good work. The evening lectures and concerts met our expectations. The meetings were largely attended and proved not only popular but very helpful to our educational forces. The directors' session was well attended and very spirited. A local institute was held at Mt. Holly Springs. It was an unusually strong meeting, because of the excellent papers presented and the helpful discussions that followed. The attendance was not what we had reason to expect.

FOREST.—Supt. Morrison: The annual institute was held December 16th to 20th. Dr. C. H. Gardinier, Supt. W. M. Peirce, and Dr. Walter R. Egbert were the principal instructors. Prof. F. A. Wheeler had charge of the music. The instruction and the entertainments were first class in every particular. During the month there have been five vacancies in the schools of the county.

FAYETTE.—Supt. Lewellyn: The annual teachers' institute was held in Uniontown during the week beginning December 16. It was the largest gathering of teachers in the history of the county, 656 being present. It was a good institute and the teachers gained

much from the instruction afforded them. The following instructors were present: Dept. Supt. Teitrick, Dr. W. W. Stetson, Dr. R. A. Armstrong, Dr. T. B. Noss, Dr. S. B. McCormick, and Prof. Jerry March. The evening lecturers and entertainments were Dr. Penfield Fikes, Hon. J. Frank Hanley, Elma B. Smith Company, Round's Ladies' Orchestra, and the Washington and Jefferson Glee Club. The School Directors' convention held its annual meeting, December 18 and 19. Supt. Teitrick and Dr. McCormick addressed the convention. It was also the largest meeting ever held by this body. All in all it was a great week for the educational interests of the county.

FRANKLIN.—Supt. Lord: The recent county institute was one of the best ever held here. The key-note of the instruction was *the value of thinking*. The principal instructors were Dr. N. C. Schaeffer, Supt. J. M. Coughlin, and Dr. Charles H. Albert.

FULTON.—Supt. Lamberson: The schools visited are as a rule doing very good work. Among the teachers there are a few "time-killers." Our educational meetings are being supported beyond expectation by pupils, patrons, and teachers. The annual institute was, as far as we can judge, a success. The instructors were Drs. Chas. C. Boyer, W. M. Rifer, J. Geo. Becht, and Geo. W. Hull. Of our 81 teachers, 80 were present at the first session; full attendance during the rest of the week. The teachers are urged to make a careful study of Hamilton's "The Recitation," which along with "Glimpses of Child Nature" was adopted into the reading course.

HUNTINGDON.—Supt. Dell: I attended the county institute in Hollidaysburg. Brother Davis had a great session. Messrs. Corson, Houck, and Fess were the "Big Three" of the occasion. We had local institutes in Warrior's Mark, Springfield, and Marklesburg. Educational meetings were held in West and Henderson districts. In every case we had crowded houses. The enthusiasm is greater this year than ever before. Our people will fill a church for an educational meeting nearly every time. Several good literary societies have been organized in the county. Great interest is manifested in the debates, old and young participating. A fine up-to-date four-room building was opened in Robertsdale. The building is architecturally well designed, has a good location, and is heated with steam. The township is very proud of "our new school house." The rough weather has delayed the completion of the large new school building in Carbon. Our teachers, with very few exceptions, are doing good work. The attendance has generally been very good.

JEFFERSON.—Supt. Jones: The county institute was held December 16–20, with an enrollment of 335 teachers. The directors' association met the same week. At the day sessions of the institute there was an average attendance of over 1,000. The evening lectures and entertainments were also well patronized. The local institute districts are well organized and many meetings arranged for in January.

LACKAWANNA.—Supt. Taylor: The fifteenth annual meeting of our County Association of School Directors was held at the Y. M. C. A. Hall in Scranton, on Friday, December 20th, 1907. A school for farmers, held by instructors from State College, at Waverly, on the same date reduced our attendance somewhat, but we still had a fair representation, 169 directors being present. The leading speaker was Supt. Eli M. Rapp, who spoke strongly in favor of industrial education. Prof. Z. T. Cure, one of the regular lecturers at farmers' institutes, spoke on "Practical Things in Education." Supt. M. W. Cummings of Olyphant read a strong paper on "Compulsory Attendance," in which he explained the law, and gave an account of the difficulties met and overcome in enforcing the law in Olyphant. In this borough of about six thousand inhabitants more than seventy-five boys and girls have been brought back into school from mills and coal breakers where they were working in violation of the attendance law. Only sixteen prosecutions were necessary. As soon as the parents saw that the Superintendent intended to enforce the law, they sent their children to school. J. Nelson Graves, President of the Association, gave a short but pithy address on "The Good School Director." The officers elected for the next year are: President, John E. Kelly of Winton; Vice-presidents, Evan G. Watkins of Taylor and J. H. Snyder of Roaring Brook; Secretary, Norton Wagner of Elmhurst; Treasurer, M. C. Donnelly of Dickson City. Following our usual custom, these officers will serve as delegates to the State Association of School Directors to be held in Harrisburg in February.

LYCOMING.—Supt. Milnor: The new school building at Montoursville, costing $35,000 was dedicated with appropriate exercises December 15. An enjoyable program was carried out, including addresses by Dr. Nathan C. Schaeffer and Hon Emerson Collins of Williamsport. The new structure is built of brick and contains twelve rooms and a large auditorium. The erection of the new building at first met with much opposition but owing to the progressive spirit of an enterprising board of directors Montoursville now has one of the finest and best equipped buildings in the state. The county institute was held in Muncy during the week of December 9th to 13th. The instructors were Dr. Nathan C. Schaeffer, Dr. H. R. Pattengill, Dr. C. C. Ellis, Supt. W. W. Evans, Hon. Emerson Collins and Prof. O. H. Yetter. Dr. Edward Amherst Ott and Gen. Z. T. Sweeney were the evening lecturers. The entertainments were given by the Parland-Newhall and the Katharine Ridgeway Companies. One hundred and twenty-five directors were present on Directors' Day. The sessions were interesting and profitable, and the institute was one of the best held in recent years.

MINERSVILLE.—Supt. Spayd: We have introduced music as an experiment into the high school, grammar school, and the sub-grammar schools, seven in all. Prof. Vought gives instruction once a week for one period in each school. The expense is defrayed out of a fund raised by entertainments in the high school and mainly by the high school.

PERRY.—Supt. Willard: Our county institute

was held the first week in December; 185 of our 190 teachers attended. The day instructors were Dr. Preston J. Search, Dr. Edw. F. Bigelow, Prof. Paul M. Pearson, and Supt. James M. Coughlin. For the evenings we had Dr. Search, Chas. J. Underhill, The Scotch Singers, and Hon. Henry Houck. To the latter we owe a debt of gratitude for consenting to take the place of Senator Robert M. Taylor, of Tennessee, who at the last moment disappointed us.

SHARON.—Supt. Hadley: We held our first teachers' institute December 30–January 3. The instructors were Miss Nannie Mackrell, Prof. Edwin Earle Sparks and Prof. F. H. Green.

SNYDER.—Supt. Walborn: The county institute was held the first week in December. Of our 128 teachers, 126 were present, those absent being detained by sickness. All the sessions were well attended and much interest was manifested. Many of our directors were present. We were fortunate in our instructors and entertainers, who largely contributed to make the fiftieth anniversary of our institute a very pleasant and profitable meeting.

TIOGA.—Supt. Longstreet: The fortieth annual institute was held at Wellsboro. The instructors were Dr. Ira W. Howerth, Profs. O. L. Warren, Andrew T. Smith, and R. M. McNeal, Supt. Chas. Lose and Hamlin E. Cogswell. The sessions were well attended and the interest most gratifying. We never had a better institute. The county directors' association met during the week. The attendance was the largest in the history of the association, numbering over 100 members. It was a profitable meeting.

TAYLOR.—Supt. Lloyd: Mr. Wm. S. Robinson, formerly of the Shamokin high school, has been elected teacher of the higher branches in our high school. We are now able to maintain a full three years' course study. Our school board has unanimously decided to erect a new eight-room building, to take the place of two old ones now in use. The estimated cost is $25,000. It is hoped to have the building ready by September, 1908. We have been obliged to procure an additional teacher in our primary grade.

UNION.—Supt. Stapleton: Every department of school work is in excellent condition. The teachers of each township and borough are organized and hold regular meetings for their own improvement and the betterment of the schools. The county institute was held December 30–January 3. Our instructors were Dr. Henry R. Sanford, Supt. James M. Coughlin, ex-Supt. R. M. McNeal, ex-Supt. B. R. Johnson, Prof. John J. McFarlane, and Rev. E. B. Bailey. The evenings were filled in by Judge Alfred Ellison, Dr. H. R. Sanford, Supt. Coughlin, and The DeKoven Male Quartette. Papers and discussions were given by Prof. C. S. Kniess, of New Berlin, on "Robert Burns"; Prof. H. M. Showalter, of Laurelton, on "What must be done and Who will do it?"; Prof. A. R. Gilbert, of Mifflinburg, on "Macbeth"; George F. Clapp, of Allenwood, on "An Ideal Lesson"; and W. C. Burns, of Winfield, on "Training for Citizenship."

VENANGO.—Supt. Armstrong: During the month there were two important meetings: the directors' convention and the annual county institute. Both these meeings were very successful.

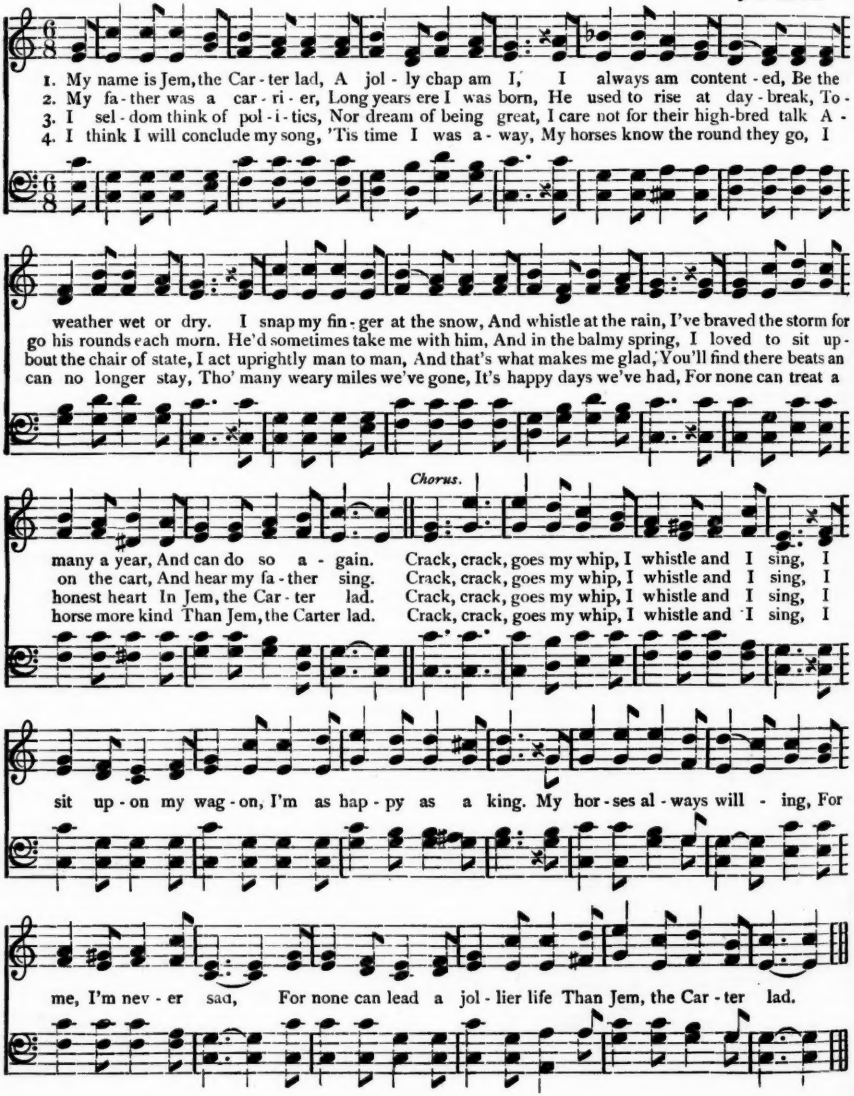
WARREN.—Supt. Gunning: Two good local institutes were held, one at Corydon, the other at North Clarendon. At the former Prof. Thompson of the Edinboro S. N. S. was present and rendered efficient aid. Another feature of this meeting was the singing of some excellent solos and choruses by a group of pupils from the Cornplanter Indian school. This school has recently received a gift of over fifty volumes for its library from the Presbyterian Board of Publication of Pittsburgh. An effort is being made to cultivate the reading habit through the schools, each pupil completing a book receives a certificate from the County Superintendent.

WASHINGTON.—Supt. Hall: The week of December 16 was institute week. Most of the teachers were present. Our instructors were Hon. Henry Houck, Dr. G. Stanley Hall, Dr. F. H. Green, Dr. Edwin Lee, and Mrs. Mary G. Noss. A new feature this year was the music which was for the most part provided by the school children of the county. Canonsburg, Washington and Charleroi brought choruses of eight or more children. These, with the Canonsburg Male Quartette, and a quartette composed of music teachers of the county, Misses Burke, Barr, Kay and Kerr, made the musical entertainments a conspicuous feature of the institute. The order was never so good. The large hall would not hold half the people. Our schools are in excellent working order. They never did as good work as they are doing to-day. Our directors have learned a lesson. They know it is wisdom to put the emphasis on good teachers. We are getting them by paying the price.

WILKINSBURG.—Supt. Allison: On December 13, we dedicated the Johnston School with appropriate ceremonies. There were about five hundred citizens present to hear the addresses and look through the building. Dr. N. C. Schaeffer made the dedicatory address. The building is one of the most complete to be found in this section of the state. It contains fourteen large, well-lighted school rooms, teachers' room, principal's office, library, janitor's and supply room, teachers' toilet, and pupils' toilets on each floor. The cost of the building is about $95,000. It is of the rotunda type, with tiled floors in the rotunda and in the toilet rooms. The heating and ventilation are as complete as any in the state. The air is heated while passing through heated coils of steampipes and driven into the rooms by a fan run by a gas engine. The foul air is drawn out of the rooms and forced out through a stack in the roof by means of a fan located in the attic. The toilet rooms are ventilated by a separate fan run by the same power or by a separate electric motor when the gas engine is not running. The rotunda, toilet rooms, and offices are also arranged for direct heating by steam radiators. Experts who have visited the building pronounce it "modern." We have thus far occupied nine rooms in the building.

There was a well-fed, prosperous looking woman of strident voice on one of the suburban trains the other morning, and above its roar and rattle her accents could be distinguished telling the story of the friend who was visiting her. "You remember Lou, of course," she said "Well, she's been staying with me since last week. And, you know! the funniest thing has happened. Lou—that's her name—always has a way of adopting other people's habits easily. Adaptability, I suppose, some people call it. For instance, if she was with a gay crowd she was gay, and with sober people she was sober. She hadn't been in our house three days before she got to talking as loud as if some one was deaf. And when I spoke to her about it—half joking, you know—she said she supposed from my talking so loud that Robert was deaf, and so she had spoken above her ordinary tone. Now, what I'd like to know, Kate, is if my voice is unusually loud. Tell me the truth." The car listened breathlessly. When Kate did the kind-hearted thing, sacrificing her desire to be honest in her instinct to be kindly, and said that she never thought so, the lady with the voice said decidedly: "There, I was sure of it! Something's the matter with Lou, and I shall advise her to consult an aurist."

JEM, THE CARTER LAD.

J. S. BAKER.

1. My name is Jem, the Car - ter lad, A jol - ly chap am I, I always am content - ed, Be the
2. My fa - ther was a car - ri - er, Long years ere I was born, He used to rise at day - break, To -
3. I sel - dom think of pol - i - tics, Nor dream of being great, I care not for their high-bred talk A -
4. I think I will conclude my song, 'Tis time I was a - way, My horses know the round they go, I
weather wet or dry. I snap my fin - ger at the snow, And whistle at the rain, I've braved the storm for
go his rounds each morn. He'd sometimes take me with him, And in the balmy spring, I loved to sit up -
bout the chair of state, I act uprightly man to man, And that's what makes me glad, You'll find there beats an
can no longer stay, Tho' many weary miles we've gone, It's happy days we've had, For none can treat a
Chorus.
many a year, And can do so a - gain. Crack, crack, goes my whip, I whistle and I sing, I
on the cart, And hear my fa - ther sing. Crack, crack, goes my whip, I whistle and I sing, I
honest heart In Jem, the Car - ter lad. Crack, crack, goes my whip, I whistle and I sing, I
horse more kind Than Jem, the Carter lad. Crack, crack, goes my whip, I whistle and I sing, I
sit up - on my wag - on, I'm as hap - py as a king. My hor - ses al - ways will - ing, For
me, I'm nev - er sad, For none can lead a jol - lier life Than Jem, the Car - ter lad.